THE EFFECT OF ORAL SUPPLEMENTATION OF AMLA JUICE WITH HONEY VS. GARLIC ON BLOOD PRESSURE AND SELECTED COMPLAINTS AMONG CLIENTS WITH HYPERTENSION IN A SELECTED COMMUNITY AT TIRUPUR

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CERTIFICATE

This is to certify that the dissertation **"A Study to Assess the Effect of oral supplementation of Amla juice with honey vs. Garlic on Blood pressure and selected complaints among clients with hypertension in a selected community at Tirupur"**is the bonafide workdone by **Ms.Brintha.T,** R.V.S College of Nursing, R.V.S Educational Trust, Sulur, Coimbatore, submitted to The Tamil Nadu Dr.M.G.R Medical University, Chennai-32, in partial fulfillment of the requirement for the award of the degree of M.Sc (Nursing) Branch I-Medical Surgical Nursing under our guidance and supervision during the academic period from 2013-2015.

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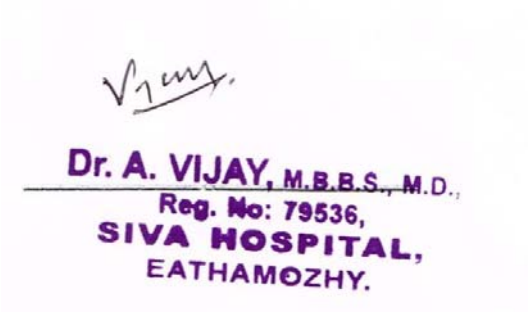

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ABSTRACT

A study to assess theeffect of oral supplementation of Amlajuice with honey vs. garlic on Blood pressure and selected complaints among clients with hypertension in a selected community at Tirupur.

The aim of the study was to identify whether Garlic and Amla juice with honey has any effect on the Blood pressure and selected complaints among hypertensive patients.

The conceptual frame work adoptedfor this study was modified Sr.Callista Roy's adaptation theory.A quasi- experimental pre- test and post test control group design was used. The sample size consisted of 72 hypertensive individuals (24 samples in experimental group I,24 samples in experimental group II and 24 samples in control group), selected by non probability purposive sampling technique. The experimental group I received 15ml Amla juice with honey and experimental group II received 2 gram ofgarlic gloves for 30 days.

Pre and post intervention assessment of blood pressure was done using manual sphygmomanometer and the selected complaints were assessed using a rating scale for experimental and control groups. The data was analyzed using descriptive and inferential statistics.

Major findings of the study were in the experimental group I 12 samples (50%) had stage II Hypertension,10 samples (41.7%) had stage I Hypertension and 2 samples (8.3%) had pre Hypertension before the intervention. In the experimental group II 17 samples (70.8%) had stage II Hypertension,6 samples (25%) had stage I Hypertension, 1 sample (4.2%) had pre Hypertension.

After the intervention in the experimental group I 21 samples (87.5%) moved to pre Hypertension, only 3 samples (12.5%) had stage I Hypertension and no samples had stage II Hypertension. In the experimental group II 22 samples(91.7%) moved to pre hypertension, Only 2 (8.3%) had stage I Hypertension and no samples had stage II Hypertension.

Among all the samples 72 (100%) (before intervention) in the two experimental groups and control groups majority of the samples 17 to 24 (70.8 - 100%) had moderate selected complaints ,3 to 7 (12.5 - 29.2%) had severe selected complaints and only 1 (4.2%) had mild complaints. After 30th day of intervention, In experimental group I 23 (95.8%) samples had mild complaints 1 (4.2%) sample had no complaints and no samples had severe complaints. In experimental group II 23 (95.8%) samples had mild complaints,1 (4.2%) sample had moderate complaints and no samples are had severe complaints. But in control group majority of the samples 20 (83.3%) had moderate complaints and4 (16.7%) samples had severe complaints.

There was a significant association between level of complaints and duration of treatment and there was no significant association between level of selected complaints and other demographic variables before the intervention.

The findings of the study concluded that there was reduction of blood pressure and selected complaints in two experimental groups after intervention compared to control group. It is clear that taking Amla juice with honey ,garlic are effective ,feasible , low cost methods to reduce the blood pressure and selected complaints of clients with hypertension.

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TABLE OF CONTENTS

CHAPTER	CONTENT	PAGE NO.
I	**INTRODUCTION**	
	1.1 Background of the study	1
	1.2 Need for the study	4
	1.3 Statement of the problem	6
	1.4 Aims of the study	7
	1.5 Specific objectives	7
	1.6 Hypothesis	7
	1.7 Operational definition	8
	1.8 Assumption	9
	1.9 Limitation	9
	1.10 Delimitation	9
	1.11 Scope of the study	10
	1.12 Conceptual frame work	10
II	**REVIEW OF LITERATURE**	
	2.1 Literature related to prevalence of Hypertension	13
	2.2 Literature related to non-pharmacological management of Hypertension	14
	2.3 Literature related to Amla juice with honey effect on Hypertension	15
	2.4 Literature related to Garlic effect on Hypertension	16

III	**METHODOLOGY**	
	3.1 Research approach	18
	3.2 Research design	18
	3.3 Variables of the study	19
	3.4 Settings of the study	19
	3.5 Population	19
	3.6 Sample size	19
	3.7 Sampling technique	20
	3.8 Sampling criteria	20
	3.9 Description of the tool	20
	3.10 Scoring and interpretation	22
	3.11 Development of the tool	22
	3.12 Validity of the tool	22
	3.13 Reliability of the tool	23
	3.14 Description of intervention	23
	3.15 pilot study report	23
	3.16 Data collection method	24
	3.17 Plan for data analysis	24
	3.18 Ethical consideration	25
IV	**ANALYSIS AND INTERPRETATION**	
	4.1 Demographic characteristics of the samples of experimental and control groups	27
	4.2 Assessment of level of blood pressure among experimental and control groups	34
	4.3 Assessment of systolic blood pressure among experimental and control groups	39
	4.4 Assessment of diastolic blood pressure among experimental and control groups	45
	4.5 Assessment of level of selected complaints among experimental and control groups	51
	4.6 Association of selected demographic variables with blood pressure and selected complaints	64

V	**DISCUSSION**	68
VI	**SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS**	
	6.1 Summary of the study	78
	6.2 Summary of the findings	78
	6.3 Significant findings	83
	6.4 Conclusion	84
	6.5 Implications	84
	6.6 Recommendations	85
VII	**BIBLIOGRAPHY**	86
VIII	**APPENDICES**	
	1. Letter requesting permission to conduct the study	91
	2. Requisition Letter for content validity of the tool	93
	3. List of experts	94
	4. Certificate of content validity	95
	5. Criteria for validation	96
	6. Research tool-English	97
	7. Research tool-Tamil	104
	8. Certificate for English editing	111
	9. Certificate for Tamil editing	112
	10. Report of self analysis done to rule out plagiarism using the software -Plagiarism detector	113

LIST OF TABLES

S.NO	TITLE	PAGE NO
4.1.1	Frequency and percentage of experimental and control group according to demographic variables	27
4.1.2	Frequency and percentage of experimental and control group according to personal habits	30
4.1.3	Frequency and percentage of experimental and control Group according to information related to Hypertension	32
4.2.1	Frequency and percentage of experimental and control group based on blood pressure	34
4.3.1	Comparison of mean systolic blood pressure score of two experimental groups and control group before intervention and level of significance	39
4.3.2	Comparison of mean systolic blood pressure score of two experimental groups and control group after the intervention (15^{th}) day and level of significance	40
4.3.3	Comparison of mean systolic blood pressure score of two experimental groups and control group after the intervention (30^{th}) day and level of significance	41
4.3.4	Multiple comparison of systolic blood pressure score in two experimental groups and control group after intervention (30^{th})day and level of significance	42

LIST OF TABLES

S.NO	TITLE	PAGE NO
4.4.1	Comparison of mean diastolic blood pressure score of two experimental groups and control group before intervention and level of significance.	45
4.4.2	Comparison of mean diastolic blood pressure score of two experimental groups and control group after the intervention (15^{th}) day and level of significance	46
4.4.3	Comparison of mean diastolic blood pressure score of two experimental groups and control group after the intervention (30^{th}) day	47
4.4.4	Multiple comparison of diastolic blood pressure score in two experimental groups and control group after intervention (30^{th})day and level of significance	48
4.5.1	Frequency and percentage of experimental and control groups based on selected complaints in four categories	51
4.6.1	Comparison of mean selected complaints score of two experimental groups and control group before intervention and level of significance	56
4.6.2	Comparison of mean selected complaints score of two experimental groups and control group after the intervention (15^{th}) day and level of significance	57

LIST OF TABLES

S.NO	TITLE	PAGE NO
4.6.3	Multiple comparison of selected complaints score in two experimental groups and control group after intervention (15^{th})day and level of significance	58
4.6.4	Comparison of mean selected complaints score of two experimental groups and control group after the intervention (30^{th}) day and level of significance.	60
4.6.5	Multiple comparison of selected complaints score in two experimental groups and control group after intervention (30^{th})day and level of significance.	61
4.7.1	Association of demographic variables with level of blood pressure before the intervention.	64
4.7.2	Association of demographic variables with level of selected complaints before the intervention.	65
4.7.3	Association of demographic variables with level of selected complaints before the intervention	66
4.7.4	Association of demographic variables with level of selected complaints before the intervention	67

LIST OF FIGURES

S.NO	TITLE	PAGE. NO
1.1	Conceptual frame work	12
4.2.1	Level of blood pressure before intervention	36
4.2.2	Level of blood pressure after intervention 15th day.	37
4.2.3	Level of blood pressure after intervention 30th day.	38
4.3.1	Mean score percentage of systolic blood pressure of experimental group I &II and control group before and after intervention	44
4.4.1	Mean score percentage of diastolic blood pressure of experimental group I &II and control group before and after intervention	50
4.5.1	Level of selected complaints before intervention	53
4.5.2	Level of selected complaints after intervention 15th day.	54
4.5.3	Level of selected complaints after intervention 30th day.	55
4.6.1	Mean score percentage of selected complaints of experimental group I&II and control group before and after intervention	63

CHAPTER -I

INTRODUCTION

I.1 BACKGROUND OF THE STUDY

Good health has long been regarded as the most valuable goal for people to achieve. Without health, we cannot do any work and we cannot improve in life. So, health is the primary need for every one of us. A disease is a physical or mental disturbance involving symptoms, dysfunction or tissue damage.

The Global Burden of Disease Study, conducted in 2001, showed that 20% of deaths in Sub-Saharan Africa were caused by non-communicable diseases. Out of that Cardiovascular disease, cancer and injuries ranked consistently as the top three conditions in these countries (**WHO**).

Out of 57 million global deaths in 2008, 36 million, or(63%), were due to Non-communicable diseases, cardiovascular diseases, diabetes, cancers and chronic respiratory diseases. As the impact of NCDs increases, and as populations age, annual NCD deaths are projected to continue to rise worldwide, and the greatest increase is expected to be seen in low- and middle-income regions **(World Health Organization 2005).**

By 2020,heart disease will become the leading causes of death and disability worldwide with the number of fatalities projected to increase to more than 24 million by 2030.These deadly killers no longer just affect privileged individuals and nations, because more than 80% of deaths related to cardiovascular disease now occur in low and middle income countries. These diseases already affect people from villages in India and Africa.(**American College of cardiology foundation).**

Hypertension is a major chronic lifestyle disease and is an important public health problem. A recent report indicates that nearly one billion adults had hypertension in 2000 which is predicted to increase to 1.56 billion by 2025.This leads to numerous micro/macro vascular complications. Subjects with hypertension are known to have a two-fold higher risk of developing coronary artery disease ,four times higher risk of congestive heart failure and seven times higher risk of cerebrovascular disease compared to normotensive subjects .(**Nightingale nursing times, volume 9(2013).**

According to WHO survey (2002) on prevalence of cardio vascular diseases, it was estimated that 600 million people were affected with hypertension worldwide . Hypertension caused 5 million premature deaths each year worldwide ,causing 13% of global fatalities .

In India high blood pressure is a major public health problem and its prevalence is rapidly increasing among both urban and rural populations. The prevalence of hypertension ranges from 20-40% in urban adults and 12-17% among rural adults. The number of people with hypertension is projected to increase from 118 million in 2000 to 214 million in 2025, with nearly equal numbers of men and women. A survey of 26,000 adults in South India showed a hypertension prevalence of 20% (men 23% and women 17%) but 67% of those with hypertension were unaware of their diagnosis. Majority of hypertensive subjects still remain undetected and the control of hypertension is also inadequate. This calls for urgent prevention and control measures for hypertension (**CADI Research Foundation,2012).**

Ragupathy Anchala (2006) done a systematic review and meta-analysis of prevalence, awareness, and control of hypertension, According to this about 33% of urban and 25% of rural Indians were hypertensive. Of these, 25% rural and 42% urban Indians were aware of their hypertensive status. Only 25% rural and 38% of urban Indians are being treated for hypertension. One-tenth of rural and one-fifth of urban Indian hypertensive population have their BP under control. (**Public Health Foundation of India).**

According to The Seventh Report of the Joint National Committee(August ,2004) on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) - new classification scheme for hypertension is

Normal: Systolic BP <120 and Diastolic BP <80

Prehypertension: SBP 120-139 or DBP 80-89

Stage 1 hypertension: SBP 140-159 or DBP 90-99

Stage 2 hypertension: SBP ≥160 or DBP ≥100

The theme for World Health Day (WHD) 2013 is Healthy heart beat, Healthy blood pressure. The goal of WHD 2013 was to reduce heart attacks and strokes. Hypertension is a controllable disease and it has been reported that targeted reductions in people with hypertension are expected to produce large reductions in the burden of cardiovascular disease.

Dr Rafael Diaz European Society of Cardiology **(ESC)** (2011) conducted a Hypertension cohort study in the world level, According to this study, the prevalence of hypertension was the highest in upper-middle-income economies (around 50%) countries, and low-middle-income economies having an intermediate level (around 40%.).

The World health statistics 2012 reported (*16 MAY 2012)* that problem of the non communicable diseases burden is growing, One in three adults worldwide has raised blood pressure – a condition that causes around half of all deaths from stroke and heart disease.

Randy wexler, M.D (2010)recommends lifestyle modification for all patients with hypertension or prehypertension. Modifications include reducing dietary sodium to less than 2.4 gms per day; increasing exercise to at least 30 minutes per day, four days per week; limiting alcohol consumption to two drinks or less per day for men and one drink or less per day for women; following the Dietary Approaches to Stop Hypertension eating plan (high in fruits, vegetables, potassium, calcium, and magnesium; low in fat and salt); and achieving a weight loss goal of 10 lb (4.5 kg) or more. Alternative treatments such as vitamin C, coenzyme Q10, magnesium, and omega-3 fatty acids have been suggested for managing hypertension. **(The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure).**

Pharmacological management of blood pressure

Pharmacological management of blood pressure include Thiazide diuretics, Beta blockers. Angiotensin-Converting Enzyme (ACE) inhibitors. Angiotensin II Receptor blockers (ARBs) Calcium channel blockers Renin inhibitors and Vasodilators.

Non pharmacological management of blood pressure

Surya prakash bhatti Department of Internal Medicine(All India Institute of Medical Sciences, India)conducted a study about non pharmacological management of Hypertension. According to this study Non pharmacological management of high blood pressure intervention such as Weight reduction, Increased physical activity, Limited alcohol consumption, Reduced salt (sodium chloride) intake, Fish oil supplementation, Behavioral techniques, meditation and yoga**,** , herbal therapies, garlic. fish oil/omega-3-fatty acids, using Indian gooseberry can reduce the effect of hypertension.

Benefits of Amla juice with honey

The health benefits of Indian Gooseberry, also known as Amla, can be partially attributed to its high vitamin-C content. Amla enhances food absorption, balances stomach acid, fortifies the liver, nourishes the brain and mental functioning, supports the heart, strengthens the lungs, regulates elimination of free radicals, enhances fertility, Reduce high blood pressure level, helps the urinary system, increases skin health, promotes healthier hair, acts as a body coolant, flushes out toxins, increases vitality, strengthens eyes, improves muscle tone and, acts as an antioxidant.

Benefits of garlic

The Journal of Nutrition (2007) suggests garlic can inhibit the formation of cholesterol in the body and decrease the oxidation of cholesterol and blood pressure.

Evidence suggests that taking garlic may slightly lower blood pressure, particularly in people with high blood pressure. Garlic supplementation appears to reduce blood pressure, and the magnitude is quite respectable in persons with hypertension (around 10 points systolic or 8-10%) . Lifestyle changes and natural remedies may help to reduce blood pressure in people with high Blood pressure.

I.2 NEED FOR THE STUDY

Hypertension is an important worldwide public-health challenge because of its high frequency and concomitant risks of cardiovascular and kidney disease. It is ranked third as a cause of disability-adjusted life-years." High blood pressure is a global public

health problem. It is one of the major causes of premature death worldwide, killing nearly 8 million people every year, and the problem is growing.

In the Eastern Mediterranean Region, two out of five adults are affected by high blood pressure. Males have a slightly higher prevalence of high blood pressure than females in almost all countries. The proportion of affected population ranges widely among countries from 13.7% among adult males in Lebanon to 45.8% among adult males in Libya.

According to WHO nearly 80% of deaths due to cardio vascular disease occur in low and middle income countries. In India hypertension is the leading risk and estimated to be attributable for nearly 10% of all deaths. Adults prevalence has risen dramatically over the past three decades from 20% to 40% in urban areas and 12% to 17% in rural areas..

Ageing populations and rapid urbanization are reported as major contributors to the increased prevalence of high blood pressure in urban areas. Many people with high blood pressure in the Eastern Mediterranean Region remain undiagnosed, and therefore miss out on treatment that could significantly reduce their risk of death and disability from heart disease and stroke.

Samzon (2010) conducted a study on effect of Garlic on blood pressure in Australia. The study found that garlic is another powerful food-based medicine that naturally lowers cholesterol levels and reduces blood pressure. Taking garlic tablets or capsule supplements is a great way to regularly consume the herb in high enough amounts to derive significant benefits.

Oliver R frank (2005) did a systematic review and meta-analysis on Effect of Garlic on blood pressure. This review suggested that garlic preparations are superior to placebo in reducing blood pressure in individuals with hypertension.

Dr. Karin Ried and colleagues (June 2007) (The University of Adelaide in South Australia) conducted a research on effect of Garlic blood pressure. According to this research. Supplementation with garlic preparations may provide an acceptable alternative or complementary treatment option for hypertension.

Savitri Ramaiah(2011) conducted a study effect of Amla on blood pressure. Studies have proved that Amla also aids in lowering blood pressure levels. It was also recommended that drinking amla juice on a daily basis prevents complications of hypertension and other related heart diseases. Taking one spoon of Amla juice with honey every morning controls hypertension. The nutritional value of Amla, particularly its high content of Vitamin C, is what makes for positive results in terms of home remedies for blood pressure. Vitamin C is known for its ability to dilate blood vessels, thereby facilitating the flow of blood through the system and reducing pressure on arteries, effectively lowering blood pressure.

The management of hypertension includes use of Antihypertensive drugs, life style modifications and Relaxation techniques. Life style modifications are like salt restriction, low fat diet, and Regular physical activity

The investigator during her clinical exposure in the community observed that 70% of people suffered with hypertension. In this community there is no adequate health care facilities. People living in rural areas are not regularly visiting the doctor and are not serious about life style modification.

The common problem noted among Hypertensive clients are non compliance with life style modifications , no proper follow up visits to doctor and failure to take medicines regularly. In the long run ,this would make them prone to develop Coronary Artery Disease and Stroke in future. Dietary supplements which are potentially beneficial for the hypertensive patients are Amla and Garlic . As an adjuvant therapy when these are recommended and followed by the patients it would enhance the medical therapy and prevent potential complications like Coronary Artery Disease and Stroke. Through the use of Amla and Garlic cannot replace Antihypertensive, the regular intake of these will keep them healthy and prevent complications.

1.3 STATEMENT OF THE PROBLEM

An experimental study to assess the effect of oral supplementation of Amla juice with honey vs. Garlic on Blood pressure and selected complaints among clients with hypertension in a selected community at Tirupur.

1.4 AIM OF THE STUDY

The main aim of the study is to identify whether Garlic and Amla juice with honey has any effect on the Blood pressure and selected complaints among hypertensive clients.

1.5 SPECIFIC OBJECTIVES

1. To assess and compare the level of Blood pressure and selected complaints of hypertension in experimental group (1) and control group before and after giving amla juice with honey.

2. To assess and compare the level of Blood pressure and selected complaints of hypertension in experimental group (2) and control group before and after giving garlic.

3. To assess the level of Blood pressure and selected complaints of hypertension in Experimental group (1) and experimental group (2) after the intervention.

4. To associate the level of Blood pressure and selected complaints of blood pressure with selected demographic variables before the Intervention

I.6 HYPOTHESIS

H_1: There will be a significant difference in mean systolic blood pressure score between experimental group I and control group after the intervention.

H_2: There will be a significant difference in mean diastolic blood pressure score between experimental group I and control group after the intervention.

H_3: There will be a significant difference in mean systolic blood pressure score between experimental group II and control group after the intervention.

H_4: There will be a significant difference in mean diastolic blood pressure score between experimental group II and control group after the intervention.

H_5: There will be a significant difference in mean systolic blood pressure score between experimental group I and experimental group II after the intervention.

H_6: There will be a significant difference in mean diastolic blood pressure score between experimental group I and experimental group II after the intervention.

H_7: There will be a significant difference in mean selected complaints score between experimental group I and control group after the intervention.

H_8: There will be a significant difference in mean selected complaints score between experimental group II and control group after the intervention.

H_9: There will be a significant difference in mean selected complaints score between experimental group I and experimental group II after the intervention.

I.7 OPERATIONAL DEFINITIONS

Effect

It is the outcome resulting from an intervention. In this study it refers to the reduction in Blood pressure following the regular intake of the supplement Garlic/ amla juice with honey.

Blood pressure

It refers to the pressure exerted by circulating blood upon the walls of blood vessels. It is measured as systolic and diastolic .It is categorized as pre hypertension (systolic blood pressure 120 to 139 or diastolic blood pressure 80 to 89 to mm hg) ,stage 1 (systolic blood pressure 140 to 159 or diastolic blood pressure 90 to 99 mm hg),stage 2 (systolic blood pressure above 160 or diastolic blood pressure above 100 mm hg)

Amla juice with honey

One tablespoon amla juice extracted from fresh amla mixed with equal proportion of honey taken daily in the morning for 30 days before breakfast.

Garlic

Two grams of raw garlic cloves to be chewed daily in the early morning before breakfast for 30 days.

Clients with hypertension

Refers to clients diagnosed with hypertension characterized by an increase in the systolic Blood pressure of more than 140 mm Hg and diastolic Blood pressure of more than 90 mm Hg .

Selected complaints

Complaints refers to the verbal report of discomfort or unusual sensation experienced by the hypertensive clients and it is measured by a rating scale developed by the investigator

1.8 ASSUMPTIONS

- Hypertension is one of the common health problem in India
- Garlic is the easily available source to reduce the Blood pressure level.
- Garlic is a known blood thinner
- Amla juice with honey has the tendency to reduce the Blood pressure level.

1.9 LIMITATIONS

- Sample size is small hence results cannot be generalized
- The self report of the patient may not be true

1.10 DELIMITATIONS

The study is delimited to

- Only the selected community
- Interventions days are limited to 30 days.

1.11 SCOPE OF THE STUDY

This study will help to assess the blood pressure level and selected complaints. If there is significant reduction of Blood pressure level and selected complaints after oral supplementation of amla juice with honey or garlic .This result will be beneficial for the health care provider to give necessary recommendation on the use of Amla juice with honey or garlic as an effective non pharmacological measure.

1.12 CONCEPTUAL FRAMEWORK

The conceptual framework refers to the interrelated concepts that are assembled together in rational scheme by virtue of their relevance to the common theme **(Polit and Hungler 1999).**

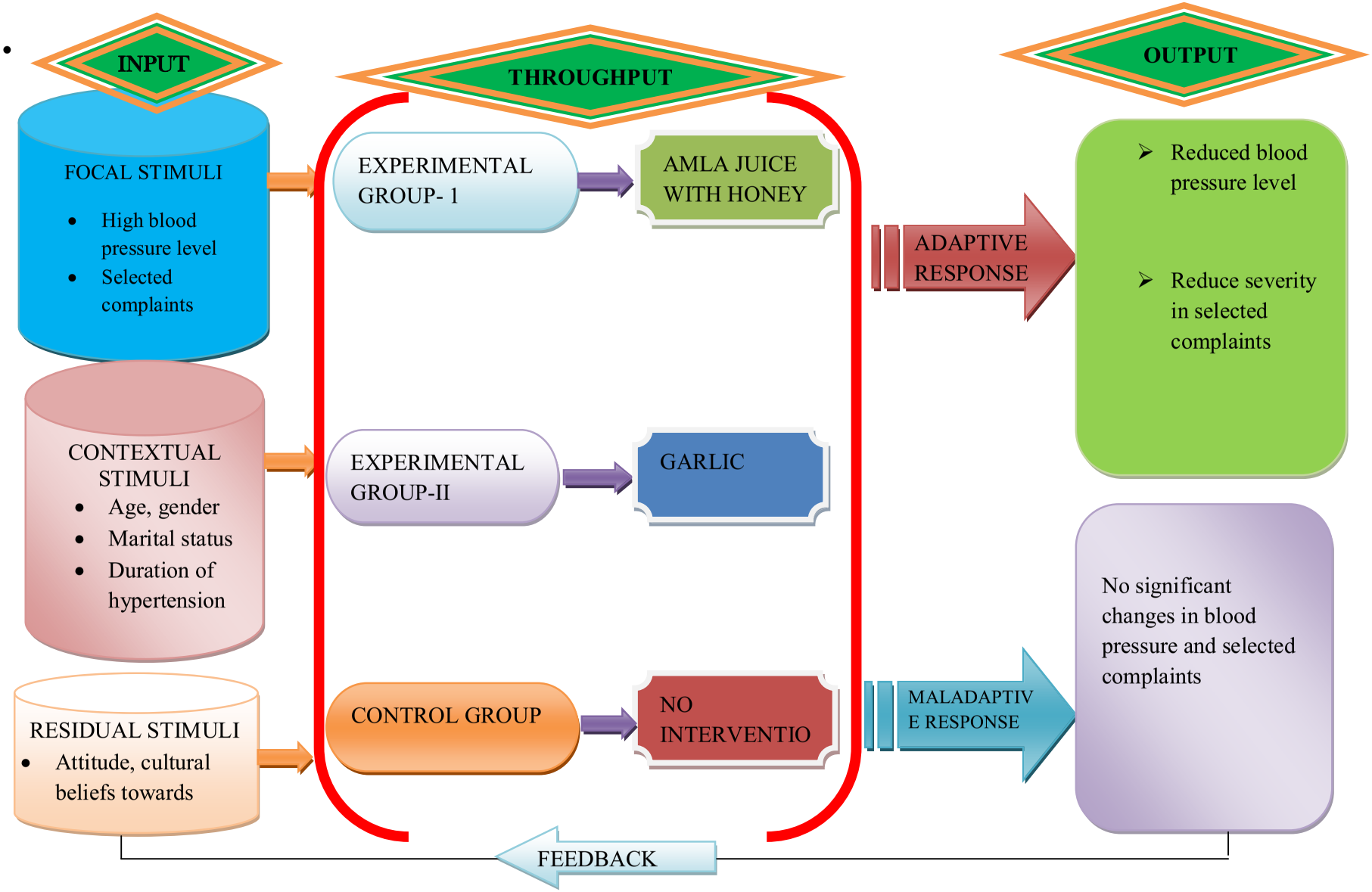
Conceptual model for this study was derived from Sr.Callista Roy's adaptation theory 1996.Roy employs feedback cycle of input, throughput and output. In Roy's adaptive system, system is defined as a set of organized components related to form a whole, and is greater than the sum of their parts. These systems react to and interact with other systems in the environment. It employs a feedback cycle of input, throughput, and output.

The input is defined as stimuli, which can be focal[immediately confronting the person], contextual [all or other stimuli that are present], or residual [non specific ,such as cultural beliefs or attitudes about illness].Throughput processes refer to the control mechanisms that a person uses as an adaptive system and effectors , the physiological functions , self concepts, and role function involved in adaptation. Output is the outcome of the system, categorized as adaptive responses [that promote a person's integrity] or ineffective responses[that do not promote goal achievement] which provide feedback for the system.

The modified model for this study explains the input, the focal stimuli as high blood pressure level and selected complaints among hypertensive clients; Contextual stimuli such as age, gender, marital status, duration of having hypertension, types of treatment taking, food habits .and residual stimuli such as attitudes towards disease and cultural beliefs about hypertension. The control mechanisms used in throughput processes include the Amla juice with honey or Garlic and the effectors include the reduction of blood pressure.

In the output, the adaptive responses made by the person who received intervention are reduced blood pressure level, reduced severity of selected complaints and hypertension. The ineffective or maladaptive responses made by control group without any intervention are no reduction on blood pressure level and no reduction in selected complaints. Thus the maladaptive responses give a feedback to the input or stimuli and the cycle continues.

Figure 1.1 Modified Roy's Adaptation theory model(1996)



CONCEPTUAL FRAMEWORK BASED ON MODIFIED ROY'S ADAPTATION MODEL(1996)

CHAPTER-II
REVIEW OF LITERATURE

A literature review early in the report provides with a background for understanding current knowledge on a topic and illuminates the significance for the new study.

(Denise F.Polit 2010)

A literature review is defined as a broad comprehensive, in depth, systematic and critical review of scholarly publication, unpublished printed or audio visual materials and personal communications.

(S.K. Sharma, 2005).

A literature review is a description and analysis of the literature relevant to a particular field or topic. A literature review is a body of text that aim to review the critical points of knowledge on a particular topic of research.

(ANA , 2000)

Literature related to the topic is presented in this chapter as follows

2.1 Literature related to Prevalence of hypertension

2.2 Literature related to non pharmacological management of hypertension

2.3 Literature related to Amla juice with honey effect on hypertension

2.4 Literature related to garlic effect on hypertension

2.1 Literature related to Prevalence of hypertension

Simon Stewart, and Karen Sliwa (2012 Dec 26) conducted a meta-analyses on prevalence of hypertension in Nigerian Africans. They reviewed studies on hypertension in Nigeria over the past five decades and also reviewed the pub med studies. The review revealed that prevalence of hypertension in Nigeria ranges from 8%-46.4% and the prevalence is similar in men and women.

SS Reddy (7-Aug-2009) (Department of Community Medicine S.V. Medical College, Tirupati, A.P., India) conducted a Cross sectional study on prevalence of hypertension . 1000 adults in the age group of 20-60 years (Males-500; Females-500) were studied .The study found that prevalence of hypertension in Tirupati was found to be 8.6%.

V. P. Anilakumari (**2014)** Department of Internal Medicine, Medical College, Kozhikode, Kerala conducted a Cross-Sectional Study on Prevalence of Hypertension among Male Occupational Bus Drivers in North Kerala, South India. The study samples were 179 bus drivers .The study revealed that among 149 samples 41.3% (74/179) had hypertension .

José Paulo(2008) Brazil research foundation conducted a study on prevalence of Hypertension. The study totally included 1717 adult individuals. The study found that overall prevalence of Hypertension was 25.23%.

Dr. L. Kannan, (June 2009) Department of community medicine. Sri.Ramachandra medical college and research institute, Chennai**,** carried out a cross sectional study on Prevalence of hypertension at Mugalivakkam primary health centre, Kanchipuram district . The study samples were 750 adult individuals .The study found that among 750 individuals 189 (25%) samples had hypertension.

2.2 Literature related to Non pharmacological management of hypertension

Surya Prakash Batti (2007) conducted a randomized controlled trial and meta-analyses on Non-pharmacological management of hypertension .Lifestyle modification was recommended as initial therapy in stage I hypertension clients. It include increased physical activity, weight loss, limited alcohol consumption, reduced sodium intake and the Hypertension diet before initiation of drug therapy. The study found that lifestyle modifications effectively lowered the blood pressure.

Amanda G Ribeiro and Rosangela MM Cotta(2011) conducted a randomized controlled trial on non**-**pharmacological treatment of hypertension among 28 women with Hypertension enrolled in the Primary Health Care unit located in the urban area of southeastern Brazil. The study samples were divided into two groups, each composed of 14 individuals, Group I samples received monthly health education workshops regarding dietary changes in Hypertension. Group II received health education combined with family orientation through home visits. The study was conducted for five months. The study identified that Blood pressure reduced in Group II more significantly . The study revealed that Nutritional orientations at the household level have more effect in reducing blood pressure.

Kirthana kunikullaya, MS Ramaiah (2000) Medical College & Hospitals conducted a study of Role of Music in Non Pharmacological Management of Hypertension Weekly music therapy sessions were provide for a duration of 12 weeks among hypertensive clients. The study found that there was a significant decrease in both systolic (15.9 mm Hg reduction) and diastolic BP (9 mm Hg) after. The control group did not show significant changes.

Dr. Robert Book, (2005) a professor of medicine at the University of Michigan conducted Meta analysis study of Non pharmacological management of hypertension The panel researchers reviewed 1,000 studies, published between 2006 and 2011, that investigated three alternative remedy categories. The first involved exercise regimens, the second included behavioral therapies like meditation and the final therapy category assessed non-invasive procedures like acupuncture or devices that helped patients slow their breathing .They found that all three regimens lowered blood pressure.

Paul K. Whelton, MD, M.Sc; (2008) U.K**,** conducted a Randomized Controlled Trial of Non pharmacologic Interventions in elderly hypertensive clients. A total of 875 men and women aged 60 to 80 years were included in the study. The 585 obese participants were randomized to reduced sodium intake, weight loss, and the 390 participants were randomized to reduced sodium intake.. The study revealed that reduced sodium intake and weight loss was a more effective non pharmacologic therapy of hypertension.

2.2 Literature related to Amla juice with honey effect on hypertension

Swetha Dasaroju(1998) conducted a study on Current Trends in the Research of Emblica officinalis (Amla) among 100 hypertensive clients. Everyday morning these clients received Amla choorna powder in empty stomach for a period of 3 months . The study revealed that Amla choorna powder effectively control blood pressure.

K.P. Sampath Kumar et al (2001) conducted a study on Recent Trends in Potential Traditional Indian Herbs Emblica officinalis and Its Medicinal Importance , The study was conducted among 35 hypertensive clients . The result of this study identified that Amla helps in controlling of blood pressure and it is an excellent medication for high blood pressure.

Department of Pharmacology, (2011) All India institute of Medical sciences ,New Delhi conducted study to evaluate the effect of Emblica officinalis exerts in salt

induced hypertension among rats. Hypertension was induced in rats by salt twice weekly for 5 weeks and replacing drinking water with 1% NACL solution. These rats received different doses of Emblica officinalis (75,150,and 300mg/kg/day)for 5 weeks. They proved that Emblica officinalis extracts significantly decreased blood pressure and heart rate .

Paul F. Jacques (2002) U.S Department of Agriculture's**,** conducted a study. Various forms of Amla were given to 200 hypertensive clients. i.e, Amla powder (Amla KI Rasayan), dry Amla soaked in plain water overnight and Amla morabba (Prepared without chemicals). The study was conducted up to 6 months. The study revealed that Amla had strong effect in reducing blood pressure.

2.3 Literature related to effect of Garlic on hypertension

Dr. Karin and colleagues (1995) university of Adelaide carried out systemic review and meta analysis type of research looking at the effects of garlic preparations on Blood pressure. They searched electronic databases of scientific and medical literature to identify relevant studies. From these studies they found that garlic preparations can reduce the Blood pressure.

American research centre (2009) carried out an Open label study among nine patients with severe hypertension for garlic effectiveness on Blood pressure**.** In this study they identified that garlic preparations significantly decreased the diastolic blood pressure from 5-14 hours after the dose. Result of the study indicated garlic preparation can reduce blood pressure.

Jean carper (2007) from the food pharmacy (German) conducted a double blind study among 50 hypertensive clients. They received daily morning two gloves of garlic (2gms) for three months .Result of the study showed that garlic cloves can have striking impact to reduce the blood pressure.

London food corporation(2000) done an open label study among 300 clients .They received daily early morning four cloves of garlic per day over a 24 week period. The study found that garlic effectively reduce blood pressure (20 to 30 mm Hg).

Clinical Research Center (1993) New Orleans conducted an open-label study in nine patients with severe hypertension . Popular garlic preparation containing 1.3% allicin at a large dose (2400 mg) was given to samples . After 5 hours of the dose

significant decrease in blood pressure was found. No significant side effects were reported. Results indicated that this garlic preparation can reduce blood pressure and physical complaints of hypertension.

Peter Fakler1and Thomas Sullivan (2009) conducted a systematic review and meta-analysis on Effect of garlic on blood pressure. Totally 25 studies were included in the systematic review. They compared these studies with placebo. Meta-analysis suggests that garlic preparations are superior to placebo in reducing blood pressure in individuals with hypertension.

CHAPTER -III

RESEARCH METHODOLOGY

Research methodology is the science of method; the science dealing with the principles of procedure in a research design in a research study. Methodology of research organizes all the components of the study in a way that is most likely to lead to valid answers to the sub problems that have been posed **(Burns and Grove, 2002).** It refers to various logical steps that are generally adopted by the investigator in studying the research problem.

This chapter describes the methodology adopted for evaluating effectiveness of amla juice with honey and garlic on the Blood pressure and selected complaints among hypertensive clients. The methodology includes research design, setting, population, sample size , sampling technique, sampling criteria , tools used, validity ,reliability, pilot study, and data collection adopted for the study.

3.1 RESEARCH APPROACH

Research approach is a systematic, controlled, empirical, and critical investigation of natural phenomena guided by theory and hypotheses about the presumed relations among such phenomena. **(Dane, 2003).**

An evaluative approach was used in this study as the study was aimed to identify whether garlic and amla juice with honey had any effect on the Blood pressure and selected complaints among hypertensive clients.

4.2 RESEARCH DESIGN

A quasi- experimental pre- test and post test control group design was used to identify whether garlic and amla juice with honey had any effect on the Blood pressure and selected complaints among hypertensive clients.

Pretest and post test control group design was used for the study.

Experimental group I- O_1-$X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1$ -O_2-$X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1X_1$-$O_3$

Experimental group II- O_1-$X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2$ -O_2-$X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2X_2$-$O_3$

Control group- O_1********** O_2**********O_3

O_1-Observation before intervention

O_2-Observation after 15th day of intervention

O_3-Observation after 30th day of intervention

X_1-Intervention one(garlic)

X_2-Intervention two(Amla juice with honey)

3.3 VARIABLES OF THE STUDY

Variables are the attributes that varies and takes on different values .The variable hypothesized to depend on or be caused by another variable is **dependent variable.** The variable that is believed to cause or influence the dependent variable in experimental research is **independent variable.** The variables in this study are mentioned below

Dependent variables:

Blood pressure and selected complaints of patients with hypertension

Independent variable:

Oral supplementation of garlic and Amla juice with honey

3.4 SETTINGS OF THE STUDY

A setting of the study refers to the area where the study is conducted. The setting for the study was a selected rural community at Tirupur district .The study was conducted in Kodangipalayam .In this community one primary health centre is there, It provides basic health check up and consultation. The common health problems noticed in the community area were Diabetes mellitus, Hypertension, and Bronchial asthma.

3.5 POPULATION

The population for the study comprises of all the hypertensive clients with Blood pressure above 140/90 mm Hg between the age group 30 to70 years

3.6 SAMPLE SIZE

In this study sample size was 72 hypertensive clients.

- Experimental group I -24 samples
- Experimental group II- 24 samples
- Control group - 24 samples.

3.7 SAMPLING TECHNIQUE

A Non probability purposive sampling technique was used for sample selection from selected community area.

3.8 SAMPLING CRITERIA

The following were the criteria for selection of samples for the study

The inclusion criteria

- Clients with the history of hypertension for more than 1 year to 10 years
- Those who were willing to participate in the study.
- Both men and women
- Hypertensive clients aged between 30 years to 70 years

The exclusion criteria

- Who were not willing to participate
- Clients who had systolic Blood pressure more than 200mmhg
- Clients who had other co-morbid conditions like Diabetes Mellitus, Coronary Artery Disease
- Clients who were already taking medicines known to be blood thinners

3.9 DESCRIPTION OF RESEARCH TOOL

The tool used in the study consisted of three parts

Part I. Structured interview schedule

Part II. Observation schedule

Part III. Rating scale of Selected complaints of hypertension

STRUCTURED INTERVIEW SCHEDULE

It consists of three sections A,B, and C.

Section-A

Demographic information

The purpose of the structured interview schedule was to gather personal information like age, sex, marital status, education, occupation, monthly income, type of work performed, type of family and food

Section-B

Information related to personal habits

This section used to gather information related to personal habits like smoking, alcohol, chewing tobacco and exercise.

Section-C

Information related to disease condition

This section used to gather information related to disease condition (Hypertension) like years of having hypertension, Duration of treatment and details of prescribed treatment

PART II : OBSERVATION SCHEDULE

Observation schedule was used to measure the blood pressure. Both systolic and diastolic Blood pressure were monitored and recorded . Based on the values Blood pressure was classified into 3 categories namely, Pre Hypertension Stage I and, Stage 2 . Measurement of Blood pressure was done before and after the intervention(15^{th} day and 30^{th} day)

s.no	**Stages**	**range of**	
		Systolic blood pressure (mm hg)	**Diastolic blood pressure (mm hg)**
1	Pre hypertension	120-139	80-89
2	Stage I	140-159	90-99
3	Stage II	≥160	≥100

PART III :RATING SCALE

The purpose of the rating scale was to gather data on selected complaints that the Hypertensive clients reported. The rating scale was constructed with 10 selected symptoms. A 3 point scale was used to rate the response as often, sometimes and never.

3.10 SCORING AND INTERPRETATION

For rating scale I-Physical complaints:

The score for the scale was given as 2 (often), 1(sometimes), and 0 (never).The maximum score was 20.The score was interpreted as

Score	Score interpretation
0	No complaints
1-7	Mild
8-14	Moderate
15-20	Severe.

3.11 DEVELOPMENT OF THE TOOL

The tool was prepared on the basis of the objectives of the study, after an intense search of related literature, and the guidance of the experts in the field of Medical Surgical Nursing and Nutritionists. The tool was revised several times by consultation with experts and colleagues until it reached the final stage.

3.12 CONTENT VALIDITY OF THE RESEARCH TOOL

Content validity refers to the degree to which an instrument measures what it is intended to measure. **(Polit and Hungler,1999)**

The research tool including the objectives of the study along with the criteria checklist were submitted to four experts, two nursing experts, One nutritional expert and one medical expert. The two nursing experts were professors with Masters Degree in Nursing and working in different colleges of nursing in Coimbatore with more than 5 years of experience. The validity of the tool was confirmed, by the experts and no change was made in the tool. The tool was translated and edited by a PG Tamil professor working in a private college in Coimbatore.

3.13 RELIABILITY OF THE RESEARCH TOOL

Reliability is the degree of consistency and accuracy with which an instrument measures the attribute for which it is designed to measure **(Sharma 2011)**

The reliability of the structured interview schedule and the rating scales was tested by **test retest** method. The tool was administered to 10 hypertensive clients. Correlation co-efficient was calculated by Karl Pearson correlation method. The obtained 'r' value for selected complaints was 0.846.This confirmed a high correlation and stability of the tool.

The sphygmomanometer was calibrated , the calibration was obtained and certificate attached to this report

3.14 DESCRIPTION OF THE INTERVENTION

PREPARATION OF THE AMLA JUICE

Step 1 : Wash amla thoroughly under running water to remove any debris

Step2 : Cut amla fruit into pieces to remove the large seeds.

Step 3 : Place pieces of amla fruit into a blender and pulse on a medium setting Until blended into a smooth texture.

Step 4 : Strain amla juice through a fine strainer or cheesecloth into a larpitcher to remove remaining pulp. Press the pulp with a large wooden spoon to remove as much of the liquid as possible.

Step 5 : For each client add 5 ml of water and 15 ml of amla juice

Step 6 : Add equal amount of honey (15ml) with each client amla juice

Step 7 : Each client receive 5 ml of water +15 ml of amla juice +15 ml of honey

Step 8 : Every day client will receive amla juice before breakfast for 30 days.

GARLIC

Two gram garlic cloves equally weight was given to the 30 clients (experimental group 2) before breakfast continually for 30 days. The clients were instructed to chew the garlic cloves without water. Garlic cloves were weighed and given to the clients once in a week during the period of study.

3.15 PILOT STUDY

A pilot study was conducted in the same selected community. Permission was obtained from the village officer of the respective panchayat office.15 samples were selected, 5 in experimental group 1 and 5 in experimental group 2 and remaining 5 samples in control group by using purposive sampling technique. The hypertensive

clients were approached in their homes according to the information obtained from the register maintained in the health centre. After self introduction and establishing a rapport, the investigator explained the nature of study to the samples. The informed consent was obtained. The blood pressure level of the selected samples was assessed by using sphygmomanometer and data was collected by using the structured interview schedule and rating scale. The researcher gave intervention 1 to the experimental group 1, in the morning, and intervention 2 to the experimental group 2 for 15 days. For the control group no intervention was given. Post test of the experimental and control group was conducted by using the same research tool after 15 days. The duration of the pilot study was 15 days. The pilot study showed that both interventions were effective in reducing blood pressure. During the pilot study no difficulties were faced, hence no changes were made in the tools and research methodology.

3.16 DATA COLLECTION METHOD

The main study was done from 16 – 3 – 2015 to 14 – 4 – 2015 in the selected community area. Prior permission was obtained from the Panchayat office of the respective community areas. The investigator contacted the village health nurse in the selected community, explained the purpose of the study and obtained a list of names and address of hypertensive clients from the records maintained in the health centre.

The investigator visited the homes of the hypertensive clients and explained the purpose of the study. The respondents were assured of the anonymity and confidentiality of the information that would be collected from them. After obtaining their consent, willingness, samples who fulfilled the criteria were selected by purposive sampling method. A comfortable sitting position was provided to the clients and Blood pressure was checked . The demographic data and selected hypertensive complaints were collected by interviewing the clients using rating scale. The 15ml of amla juice with 15ml of honey was given to the experimental group I one time a day in the morning before breakfast and two grams of garlic was given to the experimental group II by the researcher before breakfast. For control group no intervention was given. In both Experimental groups and control group, on 15^{th} day the investigator conducted the post test and 30^{th} day another post test was conducted by using the same tool.

3.17 PLAN FOR DATA ANALYSIS

The data obtained were analyzed using descriptive and inferential statistics

Descriptive statistics

Frequency and percentage distribution were used to analyze demographic variables and to assess the level of blood pressure and selected physical complaints

Mean and mean score percentage was used to determine the difference in the level of Blood pressure and selected complaints.

Inferential statistics

Three group Anova test was used to determine the significant difference in the level of blood pressure and selected complaints

Posthoc Anova test was used to determine multiple level comparison between three groups

Correlation between the blood pressure and physical complaints of the clients was determined by using Karl Pearson's co-efficient of correlation .

3.18 ETHICAL CONSIDERATION

Formal permission was obtained from concerned authority, Panchayat president of the community areas. The nature, purpose of study and intervention was explained and obtained the informed consent of the samples. Privacy and comfort of the samples was maintained throughout the study. Without forcing or compelling them and without interfering them during their household activities during data collection. Adequate explanation was given whenever they asked questions. Records were made for each samples. After 30^{th} day of intervention the benefits of intervention was thoroughly explained to control group samples and encouraged them also to make use of the intervention.

CHAPTER- IV

DATA ANALYSIS AND INTERPRETATION

Analysis is the process of organizing and synthesizing the data so as to answer research questions and test hypothesis. Analysis is referred as a method of organizing data in such a way that research questions can be answered and hypothesis can be tested.

(Sharma 2005)

Analysis of data in study describes the data in meaningful terms as the data collected does not answer the research questions or test research hypothesis. The data used is to be systematically analyzed so that trends and patterns of relationships can be detected.

This chapter deals with the analysis and interpretation of data collected from 72 Hypertensive clients in a selected community areas in Coimbatore

The data have been presented under the following sections

4.1 Demographic characteristics of the sample in experimental and control group

Demographic characteristics of the samples have been presented in relation to their personal characteristics; personal habits and information related to the disease condition for the two experimental groups and control group in frequency and percentage.

4.2 Assessment of the level of blood pressure in two experimental groups and control group

Level of blood pressure of the experimental and control group has been analysed and compared in two levels before and after intervention on 15th day and 30th day in frequency and percentage. The mean score and level of significance is also been analyzed before and after intervention.

4.3 Assessment of selected complaints of samples in two experimental groups and control group

Physical complaints of the experimental group and control group have been analysed and compared in four levels (no complaints, mild, moderate and severe) before and after intervention 15th day and 30th day in frequency and percentage. Also the mean score and level of significance has been computed before and after the intervention.

TABLE-4.1.1

Frequency and percentage distribution of experimental groups and control group according to personal characteristics.

N=72

s.no	Characteristics	Control group n=24		Experimental group 1 n=24		Experimental group 2 n=24	
		F	%	F	%	F	%
1	Age						
	a.30 to 50 years	13	54.1	11	45.8	12	50.0
	b.51 and above	11	45.8	13	54.2	12	50.0
2	Gender						
	a. Male	11	45.8	10	41.7	12	50.0
	b. Female	13	54.2	14	58.3	12	50.0
3	Educational status						
	a. Illiterate	8	33.3	9	37.5	10	41.7
	b. Primary education	8	33.3	11	45.8	9	37.5
	c. Higher secondary	8	33.3	4	16.7	5	20.8
4	Occupation						
	a. Coolie	4	16.7	9	37.5	10	41.7
	b. Private employee	9	37.5	7	29.2	7	29.2
	C. Own business	5	20.8	4	16.7	5	20.8
	d. Unemployed	6	25.0	4	16.7	2	8.3
5	Income per month						
	a. Below Rs 5000	9	37.5	14	58.3	12	50.0
	b. Rs 5000- Rs 10,000	15	62.5	10	41.7	11	45.8
	c. Rs 10,000 and above	-	-	-	-	1	4.2
6	Nature of job						
	a. Moderately	1	4.2	2	8.3	1	4.2
	b. Sedentary	5	20.8	7	29.2	2	8.3
	c. Heavy worker	18	75.0	15	62.5	21	87.5
7	Marital status						
	a. Single	3	12.5	2	8.3	1	4.2
	b. Married	21	87.5	22	91.7	22	91.7
	c. Widow	-	-	-	-	1	4.2
8	Type of family						
	a. Nuclear	13	54.2	8	33.3	11	45.8
	b. Joint	11	45.8	16	66.7	13	54.2
9	Type of food						
	a. Vegetarian	-	-	-	-	1	4.2
	b .Non-vegetarian	24	100.0	24	100.0	23	95.8

Table -4.1.1 Presents the demographic characteristics of the samples in relation to their personal characteristics.

Age:

The age of samples ranged from 30 to 50 years and above. Most of the samples,12 to 13 (56 - 64%) in the two experimental groups and in control group were in the age group of 30 to 50 years .Remaining samples belonged to the age group of 51 and above.

Gender

In both **the** two experimental groups and control group nearly half (50 to 58.3%) were female and remaining were males with almost equal distribution.

Educational status

Nearly half of the samples 8 – 11 (33.3 - 45.8%) in the two experimental groups and in control group had primary education,8 -10 (33.3 - 41.7%) had no education and only 4 -8 (16.7 - 33.3%) had higher secondary education.

Marital status

Both the experimental groups and the control group. Majority of the samples 21 – 23 (87.5 - 95.8%) were married. 1 -3 (4.2- 12.5%) were single and remaining was a widow.

Occupation

In two experimental group and control groups nearly half of the sample 7 to9 **(**29.2 -37.5%) were private employees. In experimental group I and group II 9 to 10 (37.5 - 41.7%) samples were coolies , 4 to 5 (16.7- 20.8%) sample run own business and 2 to 4(8.3 - 16.7%)samples were unemployed. In control group 5 (20.8%) samples were doing own business, 6 (25.0%) samples were unemployed and 4 (16.7%) samples were coolie workers.

Income per month

Most of the samples in two experimental groups and control group 10 to 15 (41.7 **-** 62.5%) had monthly income below Rs 5000.Only one samples in experimental group 2 (4.2%) had a monthly income above Rs 10,000 and remaining all had a monthly income Rs 5000-Rs 10,000.

Nature of job

Majority of the samples in two experimental groups and control group 15 to 21 (62.5-87.5%) samples were doing heavy physical work,2 to 7 samples (8.3 - 29.2%) had sedentary work, and 1 to 2 (4.2 - 8.3%) was a moderately sedentary worker.

Type of family

More than half of samples 13 (54.2%) in control group and 8 -11 (33.3 - 45.8%) in experimental groups were from nuclear family. Remaining more than half 11-16 (54.2 - 66.7%) in experimental groups and 11 (45.8%) in control group were from joint family.

Type of food

All the samples in experimental group I and control group 24 (100%) and almost all samples 23 (95.8%) in experimental group II were taking both veg and non veg food.

TABLE-4.1.2

FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXPERIMENTAL GROUPS AND CONTROL GROUP ACCORDING TO PERSONAL HABITS

N=72

S.No	Habits	Control Group N=24		Experimental Group 1 N=24		Experimental Group 2	
		f	%	f	%	f	%
1	Smoking						
	a. Yes	4	16.7	5	20.8	7	29.2
	b. No	20	83.3	19	79.2	17	70.8
2	Alcohol consuming						
	a. yes	3	12.5	4	16.7	8	33.3
	b. No	21	87.5	20	83.3	16	66.7
3	Chewing tobacco						
	a. yes	3	12.5	2	8.3	4	16.7
	b. No	21	87.5	22	91.7	20	83.3
4	Exercise						
	a. Yes	24	100.0	24	100.0	2	8.3
	b. No					22	91.7
5	Eating outside foods						
	a. yes	0	0.0	0	0.0	1	4.2
	b. no	24	100.0	24	100.0	23	95.8

Table 4.1.2 presents frequency and percentage distribution of experimental groups and control group according to personal habits

Smoking

Majority of the samples in control group 20 (83.3%) and in two experimental group 1 and II - 17 to19 (70.8 - 79.2%) did not have the habit of smoking.

Alcohol consuming

Most of the samples in two experimental groups and control group 16 to 21 (66.7 - 87.5%) samples did not have the habit of alcohol consumption and rest only 3 to 8 (12.5 - 33.3%) had the habit of alcohol consumption.

Tobacco chewing

Most of the samples in the two experimental groups and control group 20 to 22 (83.3 - 91.7%) samples did not have the habit of tobacco chewing

Regular exercise

All of the samples in experimental group 1 and control group 24 100%) had the habit of doing exercise. Majority of samples 22 (91.7%) in experimental group II did not have the habit of doing exercise.

Eating outside foods

All the samples in experimental group 1 and control group 24 (100%) and 23 (95.8%) samples in experimental group II did not have the habit of taking outside foods.

TABLE-4.1.3

FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXPERIMENTAL GROUPS AND CONTROL GROUP ACCORDING TO INFORMATION RELATED TO HYPERTENSION

N=72

S.No	Information	Control Group N=24		Experimental Group N=24		Experimental Group N=24	
		f	%	f	%	f	%
1	History of Hypertension						
	a. less than 1 year	10	41.7	9	37.5	7	29.2
	b. 1 to 5 years	8	33.3	7	29.2	8	33.3
	c. More than 5 years	6	25.0	8	33.3	9	37.5
2	History of hospitalization because of hypertension						
	a. Yes	1	4.2	3	12.5	8	33.3
	b. No	23	95.8	21	87.5	16	66.7
3	Regular treatment for hypertension						
	a. Yes	5	20.8	5	20.8	7	29.2
	b. No	19	79.2	19	79.2	17	70.8
4	Duration of treatment						
	a.<1 year	11	45.8	11	45.8	7	29.2
	b.1 to 3 years	8	33.3	6	25.0	10	41.7
	c. >5 years	5	20.8	7	29.2	7	29.2
5	Hypertensive diet						
	a. Yes	6	25.0	3	12.5	8	33.3
	b .No	18	75.0	21	87.5	16	66.7
6	Family history of hypertension						
	a. Yes	2	8.3	1	4.2	4	16.7
	b. No	22	91.7	23	95.8	20	83.3
7	Home remedy for hypertension						
	a. Yes	1	4.2	0	0.0	1	4.2
	b. No	23	95.8	24	100.0	23	95.8

Table 4.1.3 presents frequency and percentage distribution of experimental groups and control group according to information related to hypertension

Majority of the samples 7 to 10 (29.2 to 41.7%) in two experimental groups and control groups had the history of hypertension less than 1 year.7 to 8 (29.2 - 33.3%) samples had the history of hypertension for 1 to 5 years, and 6 to 9 (25.0 - 37.5%) samples had the history of hypertension more than 5 years.

Majority of the samples in two experimental groups and control group 16 to 23 (66.7 - 95.2%) had no history of hospitalization and 1 to 8 (4.2 - 33.3%) had the history of hospitalization.

Majority of the samples in two experimental groups and control group 17 to 19 (70.8 - 79.1%) did not take regular treatment for hypertension and 5 to 7 (20.8 - 29.2%) samples report taking regular treatment for hypertension

Majority of the samples in two experimental groups and control group 7 to 11 (29.2 - 45.8%) were taking hypertension treatment for more than 1 year,6 to 1 (25.0 - 41.7%) were taking hypertension treatment for 1 to 3 years, and 5 to 7 (20.8-29.2%) were taking hypertension treatment for more than 5 years.

In two experimental groups and control groups majority of the samples 16 to 18 (66.7 - 75.0%) did not take hypertensive diet and 3 to 8 (12.5 - 33.3%) were taking regular hypertensive diet.

Majority of the samples in two experimental groups and control group 20 to 23 (83 .3- 95.8%) samples had the family history of hypertension and 1 to 4 (4.2 - 16.7%) had no family history of hypertension.

Majority of the samples in two experimental groups and control group 23 to 24 (95.8 - 100%) were not following the home remedy for hypertension and one (4.2%) in control group and 1 in experimental group II were following home remedy for hypertension.

TABLE -4.2.1

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLES IN EXPERIMENTAL GROUPS AND CONTROL GROUP BASED ON BLOOD PRESSURE IN THREE CATEGORIES BEFORE AND AFTER INTERVENTION

N=72

S.no	Levels of Hypertension	Experimental group 1						Experimental group 11						Control group					
		Before Intervention		After intervention				Before Intervention		After intervention				Before intervention		After			
				15^{th} day		30^{th} day				15^{th} day		30^{th} day				15^{th} day		30^{th} day	
		F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	Pre Hypertension	2	8.3	5	20.8	21	87.5	1	4.2	2	8.3	22	91.7	1	4.2	1	4.2	1	4.2
2	Stage 1	10	41.7	18	75	3	12.5	6	25	19	79.2	2	8.3	6	25	7	29.2	10	41.7
3	Stage 11	12	50	1	4.2	-	-	17	70.8	3	12.5	-	-	17	70.8	16	66.7	13	54.2

The table 4.2.1 presents frequency and percentage distribution of samples in experimental groups and control group based on blood pressure in three categories before and after intervention

In the two experimental groups and control group 6 to 10 (25.0 - 41.7%) had stage I Hypertension, 12 to17 (50 - 70.8%) had stage II Hypertension and only 1 to 2(4.2 - 8.3%) had pre hypertension before intervention.

After intervention (15^{th} day) there was a slight reduction in the hypertension levels in two experimental groups and no changes in control group. In two experimental groups 18 to 19 (75 - 79.2%) samples in stage I hypertension, 2 to 5 (8.3 - 20.8%) samples in pre hypertension and only 1 to 3 (4.2 - 12.5%) samples in stage II hypertension. In control group 1 (4.2%) in pre hypertension, 7 (29.2%) were in stage I hypertension and 16 (66.7%) were in stage II hypertension.

After 30^{th} day intervention there was a marked reduction in both the experimental groups. Majority of samples in 21 -22 (87.5 - 91.7%) in two experimental groups moved to pre Hypertension, only 2 to 3 (8.3 - 12.5%) samples had stage I Hypertension and no samples had stage II Hypertension. In control group 10 (41.7%) samples had stage I Hypertension, 13 (54.2%) had stage II Hypertension and only 1 (4.2%) had pre Hypertension after 30^{th} day .

FIGURE-4.2.1

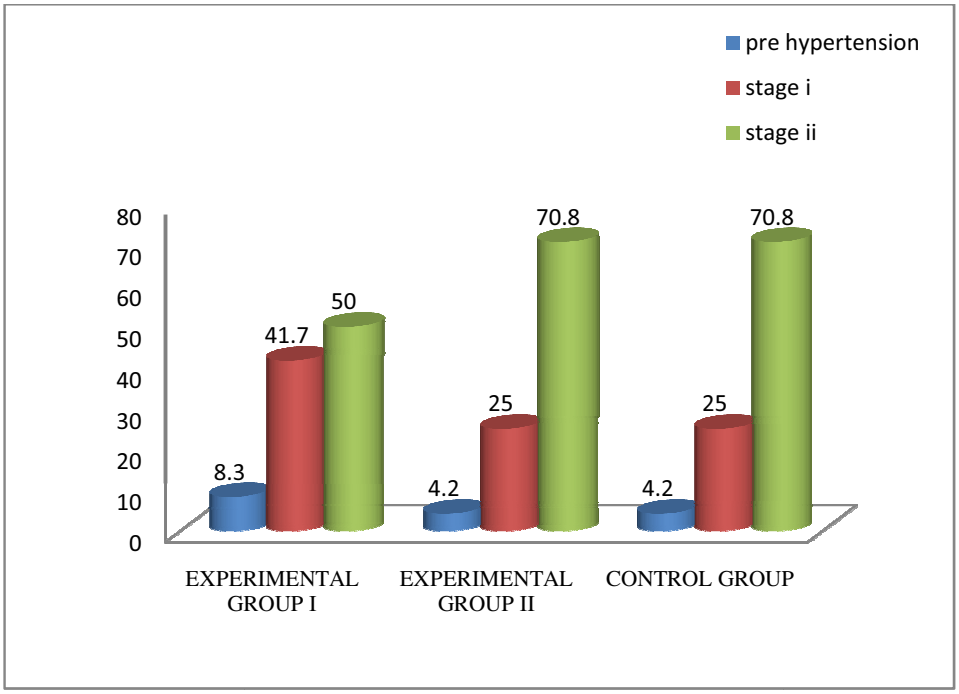


Figure 4.2.1: Percentage of level of hypertension in experimental groups and control group before the intervention.

FIGURE-4.2.2

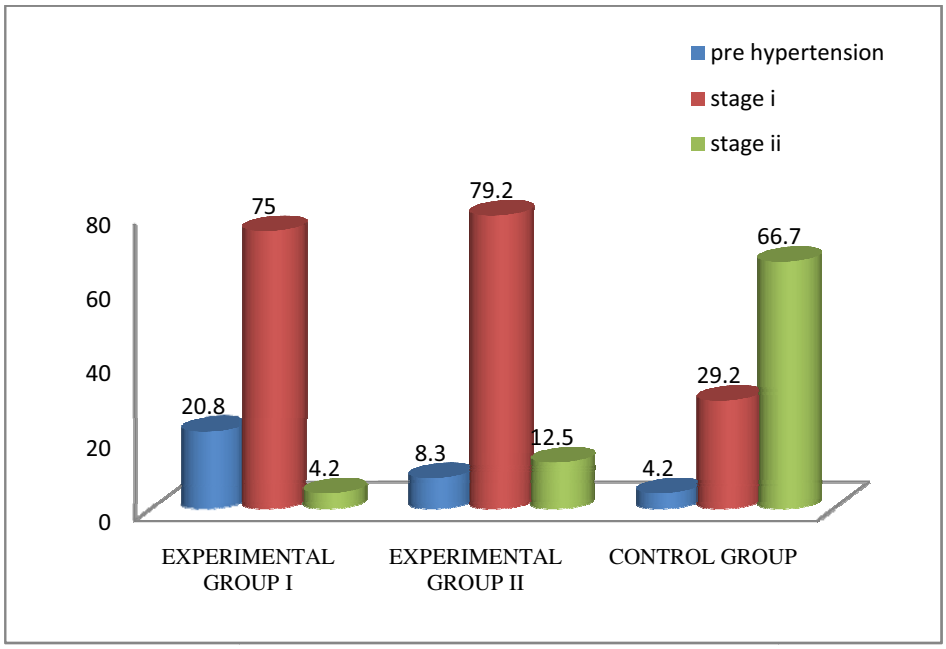


Figure 4.2.2: percentage of level of hypertension in experimental groups and control group after the intervention(15th) day..

FIGURE-4.2.3

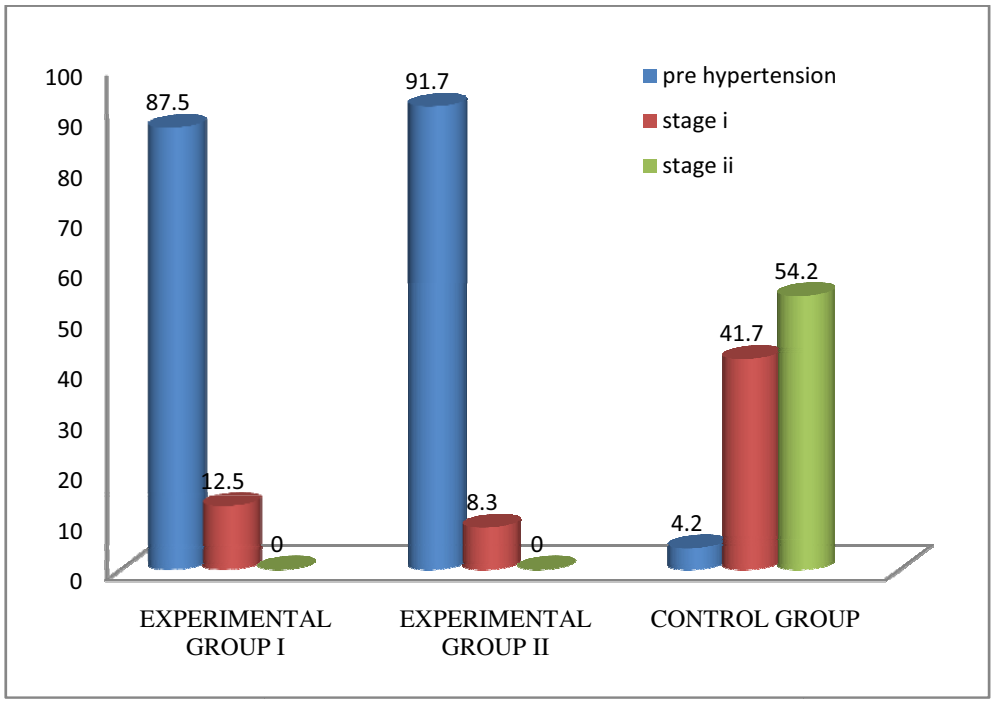


Figure 4.2.3 : percentage of level of hypertension in experimental groups and control group after the intervention(30th) day.

TABLE-4.3.1

COMPARISON OF MEAN SYSTOLIC BLOOD PRSSURE SCORE OF THE THREE GROUPS BEFORE THE INTERVENTION AND LEVEL OF SIGNIFICANCE

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group 1 N=24	153.75	13.45	
Experimental group II N=24	158.75	11.156	0.829**
Control group N=24	155	11.034	

**-No significance

Table value-19.45

Table 4.3.1 presents comparison of mean systolic blood pressure score of the three group before the intervention and level of significance

The mean scores on systolic blood pressure score of the two experimental group before the intervention ranged from 153.75 - 158.75. Statistically there was no significant difference ($f=0.829, df(2), p<0.05$) between the mean score of the two experimental group and control group with regard to systolic blood pressure .

This table conclude that samples in two experimental groups and control group had systolic blood pressure almost the same before intervention.

TABLE-4.3.2

COMPARISON OF MEAN OVERALL SYSTOLIC BLOOD PRSSURE SCORE OF THE THREE GROUP AFTER THE INTERVENTION (15TH DAY) AND LEVEL OF SIGNIFICANCE

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group 1 N=24	142.08	8.330	11.58**
Experimental group II N=24	147.08	10.417	
Control group N=24	155.42	10.206	

**-No significance

Table value-19.45

Table 4.3.2 presents comparison of mean overall systolic blood pressure score of the three group after the intervention (15th day) and level of significance

The mean scores on systolic blood pressure score of the two experimental group after the intervention 15th day ranged from 142.08-147.08. There was no significant difference between the mean score of the experimental groups and control group with systolic blood pressure.

This table concludes that was no significant difference in mean systolic blood pressure of all the groups on 15th day of intervention.

TABLE-4.3.3

COMPARISON OF MEAN SYSTOLIC BLOOD PRESSURE SCORE OF THE CONTROL GROUP AND THE TWO EXPERIMENTAL GROUP AFTER THE INTERVENTION (30TH DAY) AND LEVEL OF SIGNIFICANCE

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group 1 N=24	132.92	10.82	54.24*
Experimental group II N=24	130.42	5.500	
Control group N=24	155.42	10.20	

*-Significance

Table value-19.45

Table 4.3.3 presents comparison of mean systolic blood pressure score of the control group and the two experimental group after the intervention (30th day) and level of significance

The mean score on systolic blood pressure of the two experimental groups after the 30th day intervention ranged from 130.42-132.92 and in control group the mean systolic blood pressure was 155.42. There was a significant difference (f=0.829, df(2),p<0.05) between the mean systolic blood pressure of experimental groups and control group .

This table concludes that after the 30th day of intervention there was a significant difference between mean systolic blood pressure in experimental groups and control group.

So the hypothesis (H_1) There will be a significant difference in mean systolic blood pressure score between experimental group (I) and control group after the intervention is accepted.

TABLE -4.3.4

MULTIPLE COMPARISON OF SYSTOLIC BLOOD PRESSURE SCORE IN 2 EXPERIMENTAL GROUP AND CONTROL GROUP AFTER 30TH DAY INTERVENTION BASED ON POSTHOC ANOVA AND LEVEL OF SIGNIFICANCE

N=72

Groups	Mean score	Mean difference	P value
Experimental group I	132.92	2.50	0.627
Experimental group II	130.42		
Experimental group I	132.92	22.50	0.00*
Control group	155.42		
Experimental group II	130.42	25.0	0.00*
control group	155.42		

*-Significance

P value < 0.05,the group had significance

The table 4.3.4 presents multiple comparison of systolic blood pressure score in 2 experimental group and control group after 30th day intervention based on posthoc anova and level of significance

The table concludes that experimental group 1 and experimental group 2 had 2.50 difference in mean. It was Statistically (POSTHOC ANOVA)showed that there was a significant difference between mean systolic blood pressure in experimental group 1 and experimental group II. So the hypothesis **(H_5)** There will be a significant difference in mean systolic blood pressure score between experimental group(I) and experimental group II after the intervention is accepted.

Between experimental group 1 and control group there was a mean difference of 22.50 which showed that statistically there was a significant difference between mean blood pressure in experimental group 1 and control group. So the hypothesis **(H_1)** There will be a significant difference in mean systolic blood pressure score between experimental group(I) and control group after the intervention is accepted .

Between experimental group II and control group there was a mean difference of 25.0 which showed statistically that was a significant difference between mean blood pressure in experimental group II and control group. So the hypothesis **(H_3)** There will be a significant difference in mean systolic blood pressure score between experimental group (II) and control group after the intervention is accepted .

According to this garlic is more effective than amla juice in controlling blood pressure.

FIGURE-4.3.1

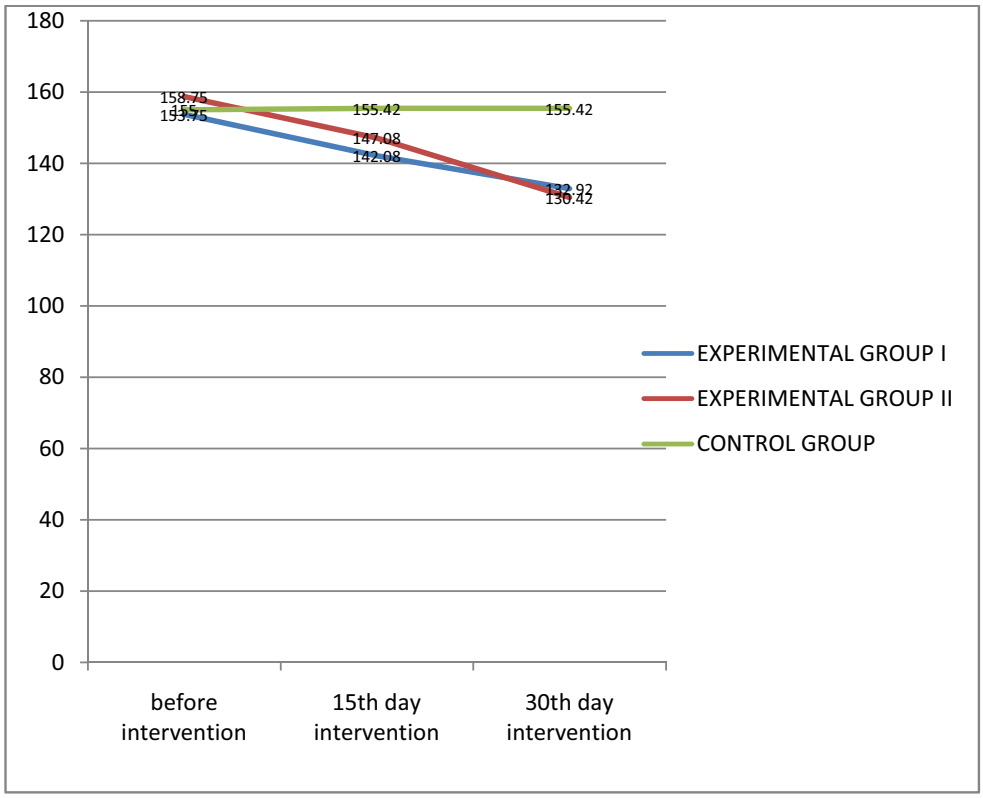


Figure 4.3.1:Mean score percentage of systolic blood pressure of two experimental groups and control group before and after intervention.

TABLE-4.4.1

COMPARISON OF MEAN OVERALL DIASTOLIC BLOOD PRSSURE SCORE OF THE CONTROL GROUP AND THE TWO EXPERIMENTAL GROUP BEFORE THE INTERVENTION AND LEVEL OF SIGNIFICANCE.

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group 1 N=24	94.58	7.211	
Experimental group II N=24	97.08	4.643	1.333**
Control group N=24	98.5	6.07	

**-No significance

Table value-19.45

The table 4.4.1 presents comparison of mean overall diastolic blood pressure score of the control group and the two experimental group before the intervention and level of significance.

The mean score on diastolic blood pressure of the two experimental groups before the intervention ranged from 94.58 - 97.08, and control group the mean score on diastolic blood pressure is 98.5 which is almost same. Statistically there was no much difference ($f=0.829, d(2), p<0.05$) in the range of mean score of the diastolic blood pressure in two experimental and control group.

This table concludes that there was no significant difference in the mean diastolic blood pressure between two experimental groups and control groups before intervention.

TABLE-4.4.2

COMPARISON OF MEAN OVERALL DIASTOLIC BLOOD PRESSURE SCORE OF THE CONTROL GROUP AND THE TWO EXPERIMENTAL GROUP AFTER THE INTERVENTION (15TH DAY) AND LEVEL OF SIGNIFICANCE.

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group 1 N=24	88.33	4.815	19.908**
Experimental group II N=24	90.00	5.108	
Control group N=24	97.50	6.75	

**-No significance

Table value-19.45

The table 4.4.2 presents comparison of mean overall diastolic blood pressure score of the control group and the two experimental group after the intervention (15th day) and level of significance

After 15th day of intervention ,the mean diastolic blood pressure of experimental group I and II was to be ranged from 88.33 -90 .and for the control group also the mean diastolic blood pressure range 97.5. Statistically there was not much difference in the range of mean diastolic blood pressure in two experimental groups and control group. Hence there was no significant difference in the mean diastolic blood pressure between experimental groups and control groups on 15th day of intervention.

TABLE-4.4.3

COMPARISON OF MEAN OVERALL DIASTOLIC BLOOD PRSSURE SCORE OF THE CONTROL GROUP AND THE TWO EXPERIMENTAL GROUP AFTER THE INTERVENTION (30TH DAY) AND LEVEL OF SIGNIFICANCE.

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group 1 N=24	79.58	4.643	139.45*
Experimental group II N=24	79.6	3.586	
Control group N=24	98.75	5.367	

*- significance

Table value-19.45

The table 4.4.3 presents comparison of mean overall diastolic blood pressure score of the control group and the two experimental group after the intervention (30th day) and level of significance.

Present the comparisons of mean diastolic blood pressure in experimental group I and group II the mean diastolic blood pressure is ranged from to 79.58-79.6 ,where as in control group the mean diastolic blood pressure was to be 98.75. which was more than the mean diastolic blood pressure of experimental group I and II. Statistically there was a significant difference between mean diastolic blood pressure in experimental group I and II and control group after 30th day of intervention. So the hypothesis **(H_6)** There will be a significant difference mean in diastolic blood pressure score between experimental group(I) and experimental group II after the intervention is rejected.

This table concludes that after 30th day of intervention there were marked changes in that diastolic blood pressure of two experimental groups and .No changes in control group.

TABLE-4.4.4

MULTIPLE COMPARISON OF DIASTOLIC BLOOD PRESSURE SCORE IN THE TWO EXPERIMENTAL GROUP AND CONTROL GROUP AFTER 30TH DAY INTERVENTION BASED ON POSTHOC ANOVA AND LEVEL OF SIGNIFICANCE.

N=72

Groups	Mean score	Mean difference	P value
Experimental group I	79.58	0.02	1.00
Experimental group II	79.60		
Experimental group I	79.58	19.16	0.00*
Control group	98.75		
Experimental group II	79.60	20.1	0.00*
Control group	98.75		

P value < 0.05,the group had significance

*-significance

The table 4.4.4 presents multiple comparison of diastolic blood pressure score in 2 experimental group and control group after 30th day intervention based on posthoc anova and level of significance.

The table concludes that experimental group I and experimental group II had 0.02 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was no significant difference between mean diastolic blood pressure in experimental group I and experimental group II. So the hypothesis **(H_6)** There will be a significant difference in mean diastolic blood pressure score between experimental group(I) and experimental group II after the intervention is rejected.

Between experimental group I and control group there was a mean difference of 19.16 which showed that statistically there was a significant difference between mean diastolic blood pressure in experimental group I and control group. So the hypothesis **(H_2)** There will be a significant difference in mean diastolic blood pressure score between experimental group(I) and control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 20.1 which showed that statistically there was a significant difference between mean diastolic blood pressure in experimental group II and control group. So the hypothesis **(H_3)** There will be a significant difference in mean diastolic blood pressure score between experimental group(II) and control group after the intervention is accepted.

According to this both amla juice and garlic have almost the same effect in reducing blood pressure.

FIGURE-4.4.1

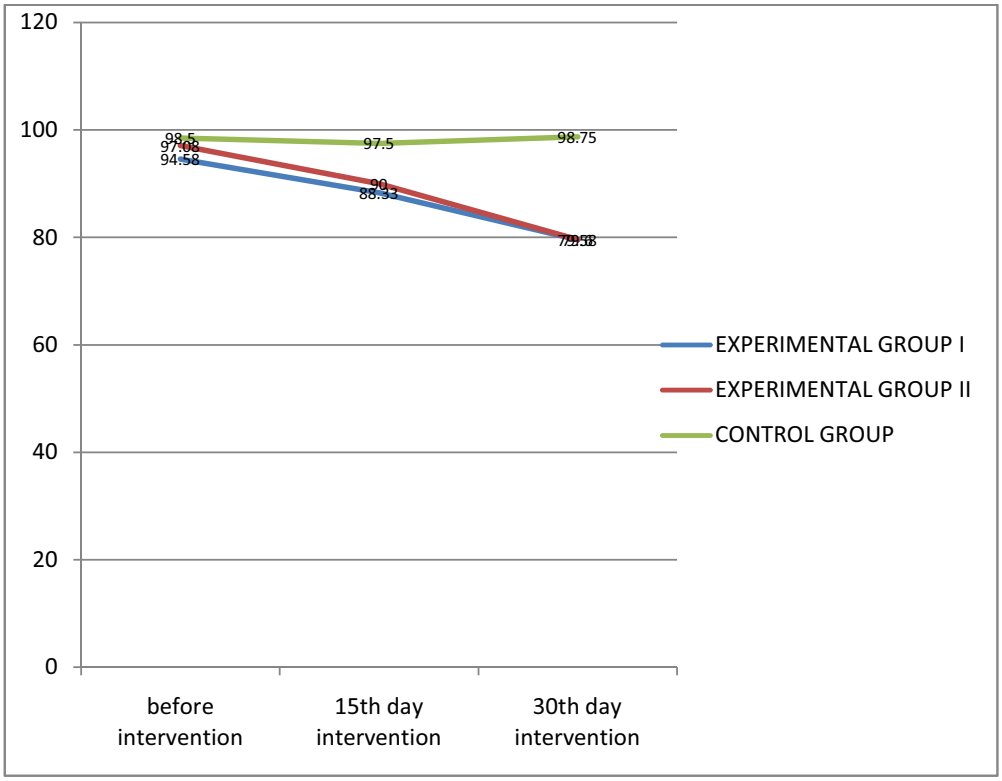


Figure 4.4.1: Mean score percentage of diastolic blood pressure of two experimental groups and control group before and after intervention

TABLE -4.2.1

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLES IN EXPERIMENTAL GROUPS AND CONTROL GROUP BASED ON BLOOD PRESSURE IN THREE CATEGORIES BEFORE AND AFTER INTERVENTION

N=72

S.no	Levels of Hypertension	Experimental group 1						Experimental group 11						Control group					
		Before Intervention		After intervention				Before Intervention		After intervention				Before intervention		After			
				15^{th} day		30^{th} day				15^{th} day		30^{th} day				15^{th} day		30^{th} day	
		F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	Pre Hypertension	2	8.3	5	20.8	21	87.5	1	4.2	2	8.3	22	91.7	1	4.2	1	4.2	1	4.2
2	Stage 1	10	41.7	18	75	3	12.5	6	25	19	79.2	2	8.3	6	25	7	29.2	10	41.7
3	Stage 11	12	50	1	4.2	-	-	17	70.8	3	12.5	-	-	17	70.8	16	66.7	13	54.2

The table 4.2.1 presents frequency and percentage distribution of samples in experimental groups and control group based on blood pressure in three categories before and after intervention

TABLE-4.5.1

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLES IN EXPERIMENTAL GROUPS AND CONTROL GROUPS BASED ON SELECTED COMPLAINTS IN FOUR CATEGORIES BEFORE AND AFTER INTERVENTION

N=72

S.no	Level of selected complaints	Experimental group 1						Experimental group 11						Control group					
		Before Intervention		After intervention				Before intervention		After intervention				Before intervention		After			
				15th day		30th day				15th day		30th day				15th day		30th day	
		F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	No complaints	-	-	-	-	1	4.2	-	-	-	-	-	-	-	-	-	-	-	-
2	Mild	-	-	5	20.8	23	95.8	1	4.2	3	12.5	23	95.8	-	-	-	-	-	-
3	Moderate	24	100	19	79.2	-	-	20	83.3	18	75	1	4.2	17	70.8	16	66.7	20	83.3
4	Severe	-	-	-	-	-	-	3	12.5	3	12.5	-	-	7	29.2	8	33.3	4	16.7

The table 4.5.1 presents frequency and percentage distribution of samples in experimental groups and control groups based on selected complaints in four categories before and after intervention.

Among all the samples 72 (100%) (before intervention) two experimental groups and control groups majority of the samples 17 to 24 (70.8 - 100%) had moderate selected complaints, 3 to 7 (12.5 - 29.2%) had severe selected complaints and only 1 (4.2%) had mild complaints.

After intervention 15th day there was marked changes in the selected complaints in two experimental groups and no changes in control group .In experimental group I 19 (79.25) samples had moderate selected complaints. Remaining 5 (20.8%) samples had mild selected complaints. In experimental group II 18 (75%) samples had moderate selected complaints, 3 (12.5%) samples had mild hypertensive complaints and only 3 (12.5%) samples had severe selected complaints. But in control group majority of the samples 16 (66.7%) had moderate selected complaints and 8 (33.3%) samples had severe selected complaints.

After 30th day intervention there was a marked changes occur in selected complaints in two experimental groups and no change in control group. In experimental group I - 23 (95.8%) samples had mild complaints 1 (4.2%) sample had no complaints and no samples are had severe selected complaints. In experimental group II -23 (95.8%) samples had mild complaints,1 (4.2%) sample had moderate hypertension complaints and no samples had severe selected complaints. But in control group majority of the samples 20 (83.3%) had moderate selected complaints and 4 (16.7%) samples had severe selected complaints after 30thday intervention.

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FIGURE-4.5.1

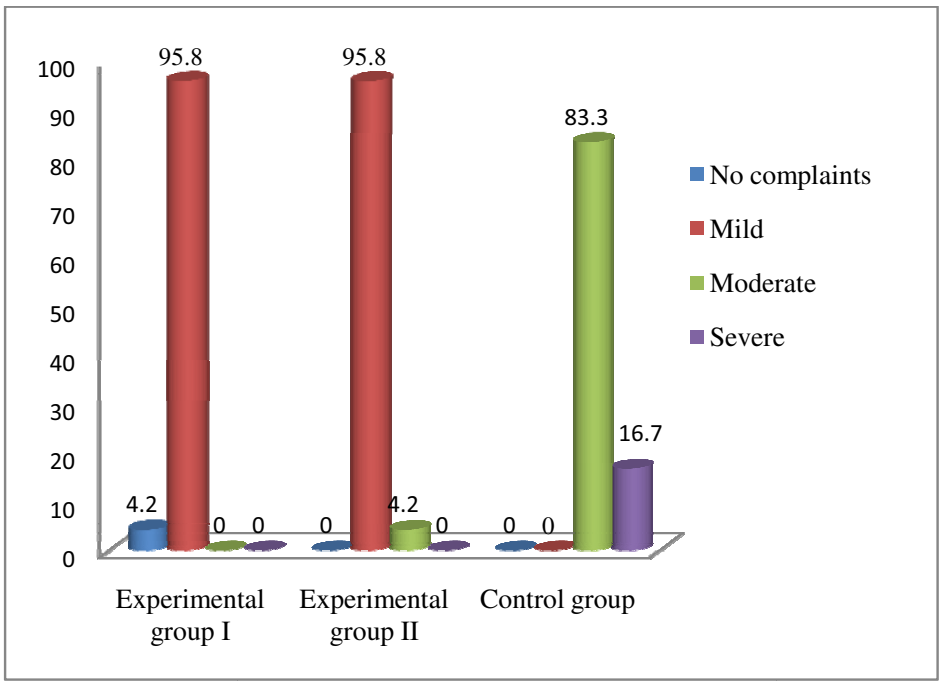

Figure 4.5.1 :level of selected complaints in two experimental groups and control group before the intervention.

FIGURE-4.5.2

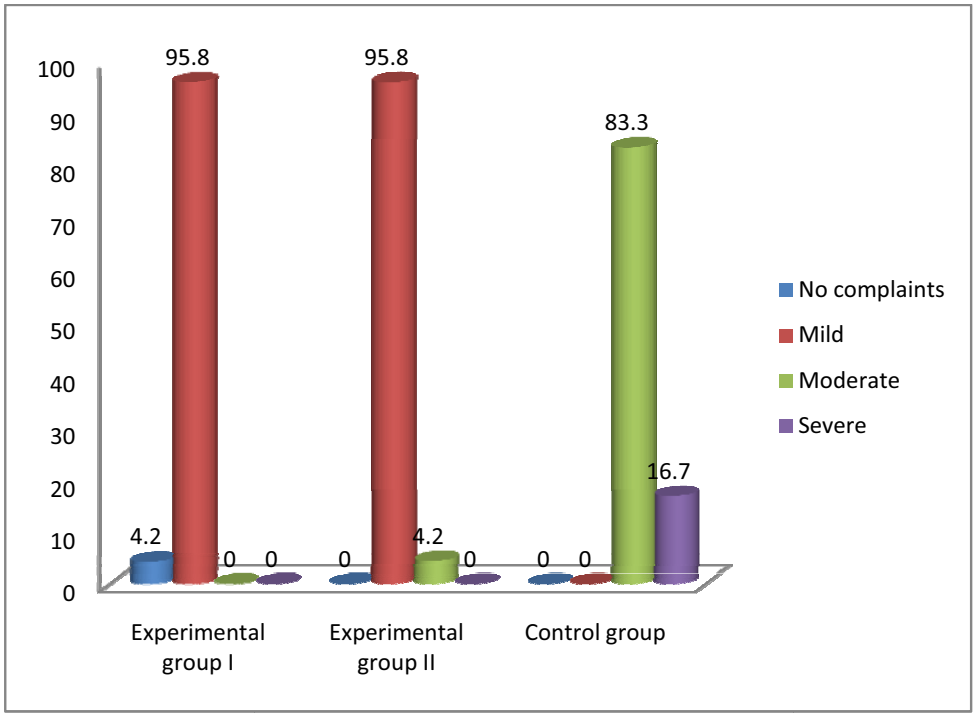

Figure 4.5.2 :level of selected complaints in two experimental groups and control group after the intervention(15th) day

FIGURE-4.5.2

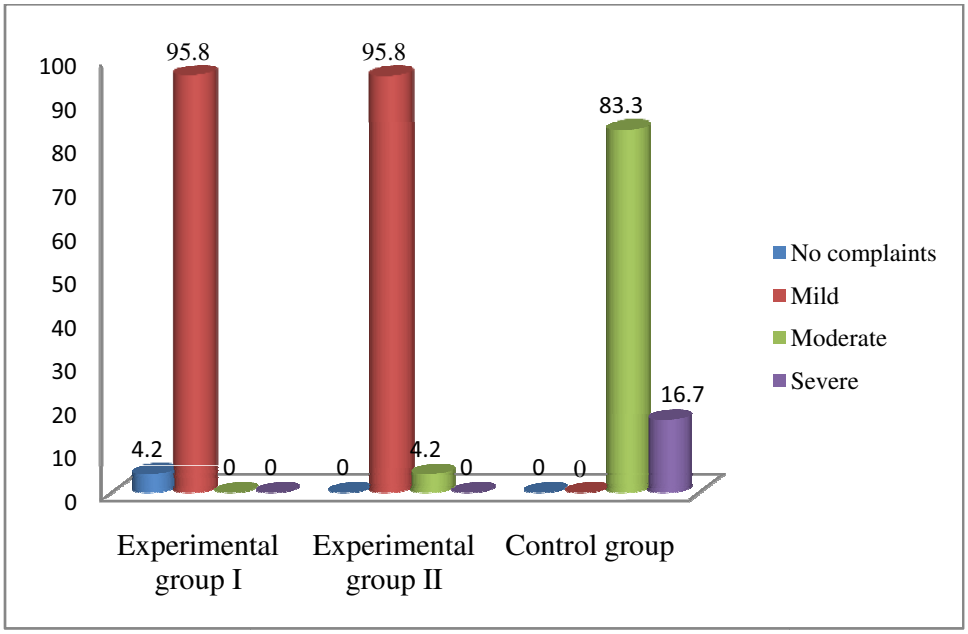

Figure 4.5.3 :level of selected complaints in two experimental groups and control group after the intervention(30th) day.

TABLE-4.6.1

COMPARISON OF MEAN OVERALL SELECTED COMPLAINTS SCORE OF THE CONTROL GROUP AND THE TWO EXPERIMENTAL GROUP BEFORE THE INTERVENTION AND LEVEL OF SIGNIFICANCE.

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group I N=24	11.16	1.30	
Experimental group II N=24	12.41	2.22	6.183**
Control group N=24	13.04	1.98	

** - No significance

Table value-19.45

The table 4.6.1 presents comparison of mean overall selected complaints score of the control group and the two experimental group before the intervention and level of significance.

The mean scores on selected complaints of the two experimental group before the intervention ranged from 11.16 - 12.41 and control group the mean score of blood pressure complaints was 13.04. Statistically there was no significant difference (f=0.829,df(2 p<0.05) between mean score of selected complaints of the two experimental groups and control group.

This table concludes that two experimental and control groups had selected complaints almost the same level of before intervention.

TABLE-4.6.2

COMPARISON OF MEAN OVERALL SELECTED COMPLAINTS SCORE OF THE CONTROL GROUP AND THE TWO EXPERIMENTAL GROUP AFTER THE INTERVENTION (15TH DAY) AND LEVEL OF SIGNIFICANCE

N=72

Groups	Mean Score	Standard Deviation	F Value P<0.05 Df (2)
Experimental group I N=24	8.62	1.71	
Experimental group II N=24	11.0	3.28	20.126*
Control group N=24	13.08	2.01	

*-significance

Table value-19.45

The table 4.6.2 presents comparison of mean overall selected complaints score of the control group and the two experimental group after the intervention (15th day) and level of significance

The mean score on overall selected complaints score of the two experimental group after 15th day intervention ranged from 8.62 - 11.0 and control group the mean score on overall selected complaints is 13.08. Statistically there was significant difference (f=0.829,df(2),p<0.05) between the mean score of selected complaints in the two experimental groups and control group.

This table concludes that after 15th day of intervention there was a significant difference between mean selected complaints score in two experimental groups and control group.

TABLE-4.6.3

MULTIPLE COMPARISONS OF SELECTED COMPLAINTS SCORE IN TWO EXPERIMENTAL GROUP AND CONTROL GROUP AFTER 15TH DAY INTERVENTION BASED ON POSTHOC ANOVA AND LEVEL OF SIGNIFICANCE

N=72

Groups	Mean score	Mean difference	P value
Experimental group I	8.62	2.37	0.003*
Experimental group II	11.0		
Experimental group I	8.62	4.45	0.00*
Control group	13.08		
Experimental group II	11.0	2.08	0.012*
Control group	13.08		

P value < 0.05,the group had significance

*-significance

The table 4.6.3 presents multiple comparisons of selected complaints score in 2 experimental group and control group after 15th day intervention based on posthoc anova and level of significance.

The table concludes that experimental group I and experimental group II had 2.37 difference in mean. Statistically POSTHOC ANOVA showed that there was significant difference between mean selected complaints score in experimental group I and experimental group II. So the hypothesis **(H_9)** There will be a significant difference in mean selected complaints score between experimental group I and experimental group II after the intervention is accepted.

Between experimental group I and control group there was a mean difference of 4.45 which showed statistically there was a significant difference between mean selected complaints score of experimental group I and control group. So the hypothesis **(H_7)** There will be a significant difference in mean selected complaints score between experimental group I and control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 2.08. Which showed statistically there was a significant difference between mean in selected complaints score in experimental group II and control group. So the hypothesis **(H_8)** There will be a significant difference in mean selected complaints score between experimental group II and control group after the intervention is accepted.

TABLE-4.6.4

COMPARISON OF MEAN OVERALL SELECTED COMPLAINTS SCORE OF THE CONTROL GROUP AND THE TWO EXPERIMENTAL GROUP AFTER THE INTERVENTION (30th DAY) AND LEVEL OF SIGNIFICANCE

N=72

Groups	Mean score	Standard deviation	F value P<0.05 Df (2)
Experimental group I N=24	3.20	1.14	
Experimental group II N=24	4.33	1.73	216.793*
Control group N=24	12.3	1.99	

*-significance

Table value-19.45

The table 4.6.4 presents comparison of mean overall selected complaints score of the control group and the two experimental group after the intervention (30th day) and level of significance

The mean score of selected complaints of the two experimental group after 30th day intervention ranged from 3.20 - 4.33and control group mean score of hypertension complaints is 12.3. There was a significant difference (f=0.829,df(2),p<0.05) in the mean score of hypertension complaints between two experimental groups and control group.

This table concludes after the 30th day of intervention there was a significant difference between mean score of selected complaints in the two experimental groups and control group.

TABLE-4.6.5

MULTIPLE COMPARISONS OF SELECTED COMPLAINTS SCORE IN TWO EXPERIMENTAL GROUP AND CONTROL GROUP AFTER 30TH DAY INTERVENTION BASED ON POSTHOC ANOVA AND LEVEL OF SIGNIFICANCE.

N=72

Groups	Mean score	Mean difference	P value
Experimental group I	3.20	1.12	0.057
Experimental group II	4.33		
Experimental group I	3.20	9.17	0.00*
Control group	12.3		
Experimental group II	4.33	8.04	0.00*
Control group	12.3		

P value < 0.05,the group had significance

*-significance

The table 4.6.5 presents multiple comparisons of selected complaints score in 2 experimental group and control group after 30th day intervention based on posthoc anova and level of significance.

The table concludes that experimental group I and experimental group II had 1.12 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was a significant difference between mean selected complaints score in experimental group I and experimental group II. So the hypothesis **(H_9)** There will be a significant difference in mean selected complaints score between experimental group I and experimental group II after the intervention is accepted.

Between experimental group 1 and control group there was a mean difference of 9.17 which showed that statistically there was a significant difference between mean in selected complaints score of experimental group I and control group. So the hypothesis **(H_7)** There will be a significant difference in mean selected complaints score between experimental group I and control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 8.04. which showed statistically there was a significant difference between mean in selected complaints score in experimental group II and control group. So the hypothesis **(H_8)** There will be a significant difference in mean selected complaints score between experimental group II and control group after the intervention is accepted.

According to this Amla juice has more effective than garlic in reducing selected complaints.

FIGURE-4.6.1

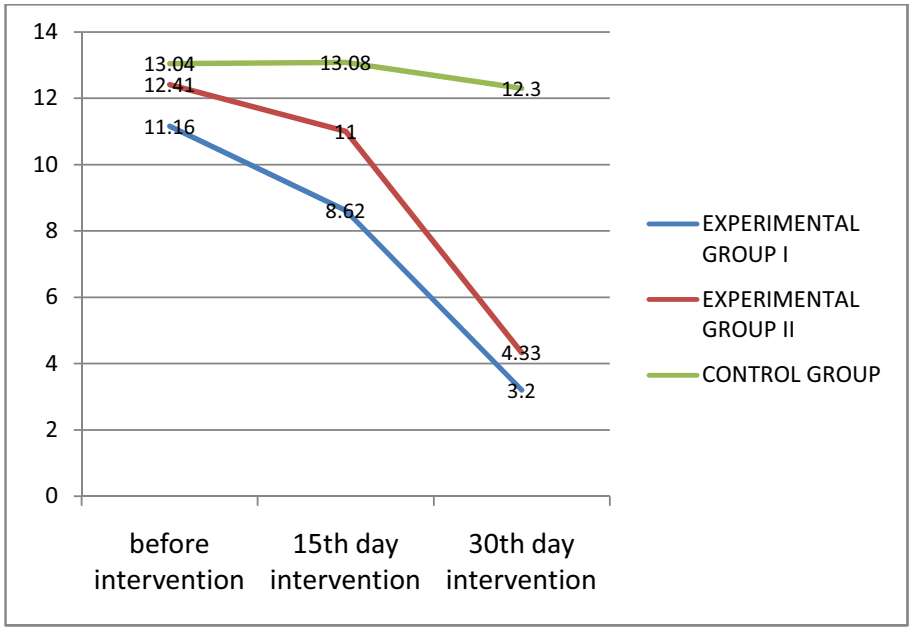

Figure 4.6.1:Mean score percentage of selected complaints of two experimental groups and control group before and after intervention

TABLE -4.7.1

ASSOCIATION OF DEMOGRAPHIC VARIABLES WITH LEVEL OF BLOOD PRESSURE BEFORE THE INTERVENTION

N=72

S.no	Demographic variables	Pre hypertension	Stage I	Stage II	χ value	Table value
1	Age					
	a.≤50 years	1	12	23	1.182	Df,2
	b.≥50 years	3	10	23	NS	5
2	Education					
	a. Illiterate	3	7	17	2.709	Df,2
	b. Primary education	1	15	29	NS	5
3	Occupation					
	a. Coolie	2	16	28	1.328	Df,3
	b .Own business	1	3	10		
	c. Unemployed	1	3	8	NS	7
4	Job					
	a. Sedentary	1	1	2	3.390	df,3
	b. White collar job	1	3	10		
	c. Heavy worker	2	18	34	NS	7
5	Family					
	a. Nuclear	1	9	22	0.937	Df,2
	b. Joint	3	13	24	NS	5
6	History of Hypertension					
	a.≤1 year	1	11	14	3.158	Df,2
	b.1 to 5 years	2	5	16		
	c.≥5 years	1	6	16	NS	5
7	History of hospitalization					
	a. Yes	1	3	8	0.363	Df,2
	b. No	3	19	38	NS	5

The table 4.7.1 presents association of demographic variables with level of blood pressure before the intervention.

There was no association between demographic variables with level of blood pressure before the intervention.

TABLE-4.7.2

ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES WITH LEVEL OF COMPLAINTS BEFORE INTERVENTION

N=71

S.No	Demographic variables	Moderate	Severe	χ value	Table value
1	Age				
	a.≤50 years	31	5	0.002	Df,1
	b.≥50 years	30	5	NS	3.84
2	Gender				
	a. Male	27	5	0.114	Df,1
	b. Female	34	5	NS	3.84
3	Education				
	a .Illiterate	23	4	0.387	Df,2
	b.Primary education	24	3	NS	5
	c. Higher secondary	14	3		
4	Occupation				
	a. Coolie	22	1	3.000	Df,3
	b. Private employee	18	5	NS	7
	c. Own business	11	2		
	d. Unemployed	10	2		
5	Income				
	a.≤5000Rs	31	4	0.402	Df ,1
	b.≥5000Rs	30	6	NS	3.84

The table 4.7.2 presents association between demographic variables with level of complaints before intervention

There was no association between demographic variables such as age ,gender, education, occupation, and income with level of selected complaints before the intervention.

TABLE-4.7.3

ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES WITH LEVEL OF SELECTED COMPLAINTS BEFORE INTERVENTION.

N=71

S.no	Demographic variables	Moderate	Severe	χ value	Table value
1	Job				
	a. White collar job	14	4	1.320	Df,1
	b. Heavy	47	6	NS	3.84
2	Type of family				
	a. Nuclear	26	5	0.190	Df,1
	b. Joint	35	5	NS	3.84
3	Smoking				
	a. Yes	13	2	0.009	Df,1
	b. No	48	8	NS	3.84
4	Alcohol				
	a. Yes	12	2	0.001	Df,1
	b. No	49	8	NS	3.84
5	Chewing tobacco				
	a. Yes	8	1	0.075	Df,1
	b. No	53	9	NS	3.84
6	Exercise				
	a. Yes	1	1	2.194	Df,1
	b. No	60	9	NS	3.84

The table 4.7.3 presents association between demographic variables with level of selected complaints before intervention.

There was no association between demographic variables such as job , type of family, smoking, alcohol, chewing tobacco, and exercise with level of selected complaints before the intervention.

TABLE-4.7.4

ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES WITH LEVEL OF SELECTED COMPLAINTS BEFORE THE INTERVENTION.

N=71

S.no	Demographic variables	Moderate	Severe	χ value	Table value
1	History of Hypertension a.≤1 year b.1 to 5 years c.≥5 years	 22 22 17	 4 1 5	 3.196 NS	 Df,2 5
2	History of hospitalization a. Yes b. No	 11 50	 1 9	 0.395 NS	 Df,1 3.84
3	Regular treatment For hypertension a. Yes b. No	 14 47	 3 7	 0.234 NS	 Df,1 3.84
4	Duration of treatment a. .≤1 year b.1 to 3 years c. .≥3 years	 14 39 8	 4 2 4	 7.534*	 Df,2 5
5	Hypertensive Diet a. Yes b. No	 12 49	 2 8	 0.001 NS	 Df,1 3.84

*-Significance

The table 4.7.4 presents association between demographic variables with level of selected complaints before the intervention.

There was a significant association between level of selected complaints and Duration of treatment and there was no significant association between level of selected complaints and other demographic variables before the intervention.

CHAPTER - V

DISCUSSION

The discussion section is devoted to a thoughtful analysis of the findings ,leading to a discussion of their clinical and theoretical utility.

(Polite, D, F.,& Beck,C.T.2004)

The study focused to assess the effectiveness of oral supplementation of amla juice with honey versus garlic on the level of blood pressure and selected complaints among clients with hypertension in a selected community at Tirupur district

5.1 DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLES.

Table 4.1.1 to 4.1.3 presents the frequency distribution of the demographic characteristics of the samples in two experimental groups and control group in relation to their personal characteristics, personal habits, and information related to disease condition.

Table 4.1.1 Frequency and percentage distribution of experimental groups and control group according to personal characteristics.

According to table 4.1.1 among the total study samples, nearly half of the samples 13 (54.2%) and 12 (50%) belonged to the age group of 51 and above. Majority of the samples (50 to 58%) were female in two experimental groups and control group .Nearly half of the samples 8 -11 (33.3 – 45.8%) in the two experimental groups and control group had primary education and only 4 – 8 (16.7 - 33.3%) had higher secondary education.

In the two experimental groups and control group majority of the samples 21 -23 (87.5 -95.8%) were married. In two experimental groups and control group 7 – 9 samples (29.2 -37.5%) were private employees, in two experimental groups 9 -10 (37.5 -41.7 %) samples were coolies .Most of the samples in two experimental groups and control group 10 – 15 (41.7 -62.5%) samples had monthly income below Rs 5000. Majority of the samples in the two experimental groups and control group 15 -21 (62.5- 87.5%) samples were doing heavy work. More than half of the samples 13 (54.2%) in control group and 8 -11 (33.3 -45.8 %) in two experimental groups were from nuclear family ,Remaining

samples were from joint family. Almost majority of the samples 23 (95.8%) were taking both vegetable and non vegetable food.

Table 4.1.2 Frequency and percentage distribution of experimental groups and control group according to personal habits.

According to table 4.1.2 majority of the samples in control group 20 (83.3%) and two experimental group 17 –19 (70.8 – 79.2 %) did not have the habit of smoking. Most of the samples in two experimental groups and control group16 – 21(66.7 -87.5 %) did not have the habit of alcohol consumption and 3 – 8 (12.5 –33.3%) have the habit of alcohol Consumption.

Most of the samples in two experimental groups and control group 20 -22 (83.3 - 91.7%) samples did not have the habit of tobacco chewing. All of the samples in experimental group 1 and control group 24 100%) have the habit of doing exercise, Majority of samples 22 (91.7%) in experimental group II did not have the habit of doing exercise. All the samples in experimental group 1 and control group 24 (100%) and 23 (95.8%) in experimental group II did not have the habit of taking outside foods.

Table 4.1.3 Frequency and percentage distribution of experimental groups and control group according to information related to hypertension.

According to table 4.1.3 majority of the samples 7 to 10 (29.2 to 41.7%) in two experimental groups and control groups had the history of hypertension less than 1year and 6 to 9 (25.0 - 37.5%) had the history of hypertension more than 5 years. Majority of the samples in two experimental groups and control group 16 to 23 (66.7 - 95.2%) had no history of hospitalization. Majority of the samples in two experimental groups and control group 17 to 19(70.8 - 79.1%) did not take regular treatment for hypertension. Majority of the samples in two experimental groups and control group 7 to 11(29.2 - 45.8%) were taking hypertension treatment for more than 1 year. In two experimental groups and control groups majority of the samples 16 to 18 (66.7 - 75.0%) did not take hypertensive diet. Majority of the samples in two experimental groups and control group 20 to 23 (83 .3- 95.8%) had the family history of hypertension. Majority of the samples in two experimental groups and control group 23 to 24 (95.8 - 100%) were not following the home remedy for hypertension.

5.2 Assessment of blood pressure level in two experimental groups and control group

Table 4.2.1 presents the frequency and percentage distribution of blood pressure level before intervention, In two experimental groups and control group 6 to 10 (25.0 - 41.7%) had stage I Hypertension, 12 to17 (50 - 70.8%) had stage II Hypertension and only 1 to 2 (4.2 - 8.3%) had pre hypertension before intervention.

After intervention (15^{th} day) , In two experimental groups 18 to 19 (75 - 79.2%) samples were in stage I Hypertension, 2 to 5 (8.3 - 20.8%) samples were in pre Hypertension and only 1 to 3 (4.2 - 12.5%) samples were in stage II Hypertension. In control group 1 (4.2%) was in pre hypertension, 7 (29.2%) samples were in stage I Hypertension and 16 (66.7%) samples were in stage II Hypertension.

After 30^{th} day of intervention in two experimental groups, Majority of 21 -22 (87.5 - 91.7%) were in two experimental groups moved on to pre Hypertension, only 2 to 3 (8.3 - 12.5%) samples had stage I Hypertension and no samples had stage II Hypertension. In control group 0 (41.7%) samples had stage I Hypertension, 13 (54.2%) samples had stage II Hypertension and only 1 (4.2%) was in pre Hypertension.

Table 4.3.1 presents the comparison of mean systolic blood pressure score of the two experimental groups and control group before the intervention and level of significance

According to table 4.3.1the mean scores on systolic blood pressure score of the two experimental group before the intervention ranged from 153.75 - 158.75. Statistically there was no significant difference ($f=0.829, df(2,69), p<0.05$) between the mean score of the two experimental group and control group with regard to systolic blood pressure.

Table 4.3.2 presents the comparison of mean systolic blood pressure score of the two experimental groups and control group after the intervention(15^{th} day) and level of significance .

According to table 4.3.2, the mean scores of systolic blood pressure of the two experimental group after the intervention (15th day) ranged from 142.08-147.08, . There was no significant difference between the mean systolic blood pressure score of the experimental groups and control group.

Table 4.3.3 presents the comparison of mean systolic blood pressure score of the two experimental groups and control group after the intervention(30th day) and level of significance

According to table 4.3.3, The mean score on systolic blood pressure of the two experimental groups after the 30th day of intervention ranged from 130.42-132.92 and in control group the mean systolic blood pressure was 155.42. There was a significant difference ($f=0.829, df(2,69), p<0.05$) between the mean systolic blood pressure of experimental groups and control group .

Table 4.3.4 presents multiple comparison of systolic blood pressure score in two experimental group and control group after 30th day intervention based on POSTHOC ANOVA and level of significance.

According to table 4.3.4, experimental group 1 and experimental group 2 had 2.50 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was a significant difference between mean systolic blood pressure in experimental group 1 and experimental group II. So the hypothesis **(H_5)** There will be a significant difference in mean systolic blood pressure score between experimental group(I) and experimental group II after the intervention is accepted.

Between experimental group 1 and control group there was a mean difference of 22.50 which showed that statistically there was a significant difference between mean blood pressure in experimental group 1 and control group. So the hypothesis **(H_1)** There will be a significant difference in mean systolic blood pressure score between experimental group (I) and control group after the intervention is accepted .

Between experimental group II and control group there was a mean difference of 25.0 which showed statistically that was a significant difference between mean blood pressure in experimental group II and control group. So the hypothesis **(H_3)** There will be a significant difference in mean systolic blood pressure score between experimental group (II) and control group after the intervention is accepted .

According to this garlic is more effective than Amla juice in controlling blood pressure.

Table 4.4.1 Presents the comparison of mean diastolic blood pressure score of the two experimental groups and control group before the intervention and level of significance

According to table 4.4.1, The mean score on diastolic blood pressure of the two experimental groups before the intervention ranged from 94.58 - 97.08, and control group the mean score on diastolic blood pressure is 98.5 which was almost same Statistically there was not much difference ($f=0.829, d(2,69), p<0.05$) in the range of mean score of the diastolic blood pressure in two experimental and control group.

Table 4.4.2 Presents the comparison of mean diastolic blood pressure score of the two experimental groups and control group after the intervention (15^{th} day)and level of significance.

According to table 4.4.2, After 15^{th} day of intervention ,the mean diastolic blood pressure of experimental group I and II was to be ranged from 88.33 -90 .and for the control group also the mean diastolic blood pressure was 97.5. Statistically there was not much difference in the range of mean blood pressure in two experimental groups and control group. Hence there was no significant difference in the mean diastolic blood pressure between experimental groups and control group on 15^{th} day of intervention.

Table 4.4.3 Presents the comparison of mean diastolic blood pressure score of the two experimental groups and control group after the intervention (30^{th} day)and level of significance

According to table 4.4.3, Present the comparisons mean of diastolic blood pressure in experimental group I and group II the mean diastolic blood pressure is ranged from 79.58 to 79.where as in control group the mean diastolic blood pressure was 98.75. Which was more than the mean diastolic blood pressure of experimental group I and II. Statistically there was a significant difference between mean diastolic blood pressure in experimental group I and II and control group after 30^{th} day of intervention.

Table 4.4.4 Presents multiple comparison of diastolic blood pressure score in two experimental group and control group after 30th day intervention based on POSTHOC ANOVA and level of significance

According to table 4.4.4, experimental group I and experimental group II had0.02 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was no significant difference between mean diastolic blood pressure in experimental group I and experimental group II. So the hypothesis **(H_6)** There will be a significant difference in mean diastolic blood pressure score between experimental group (I) and experimental group II after the intervention is rejected.

Between experimental group I and control group there was a mean difference of 19.16 which showed that statistically there was a significant difference between mean diastolic blood pressure in experimental group I and control group. So the hypothesis **(H_3)** There will be significant difference in mean diastolic blood pressure score of between experimental group(I) an control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 20.1 which showed that statistically there was a significant difference between mean diastolic blood pressure in experimental group II and control group. So the hypothesis **(H_3)** There will be a significant difference in mean diastolic blood pressure score between experimental group(II) and control group after the intervention is accepted.

The research suggested that Amla juice with honey and garlic have almost the same effect in reducing blood pressure level.

The present study finding are supported by a study conducted by **Swetha Dasaroju (1998)** .This study evaluated the effect of Emblica officinal is (Amla) among 100 hypertensive clients.. The study revealed that Amla choorna powder effectively control blood pressure.

The present study finding is supported by a study conducted by the **London food corporation(2000)** among 300 hypertensive clients .They received daily early morning four cloves of garlic per day over a 24 week period. The study found that garlic effectively reduce blood pressure 20 to 30 mm Hg.

5.3 Assessment of selected complaints of two experimental groups and control group

Table 4.5.1 presents the frequency and percentage distribution of selected complaints, Among all the samples 72 (100%)(before intervention) the two experimental groups and control groups majority of the samples 17 to 24 (70.8 - 100%) had moderate selected complaints ,3 to 7 (12.5 - 29.2%) had severe selected complaints and only 1 (4.2%) had mild complaints.

After intervention 15th day in experimental group I 19 (79.25) samples had moderate selected complaints. Remaining 5 (20.8%) samples had mild selected complaints. In experimental group II 18 (75%) samples had moderate selected complaints, 3 (12.5%) samples had mild selected complaints and only 3 (12.5%) samples had severe selected complaints. But in control group majority of the samples 16 (66.7%) had moderate selected complaints and 8 (33.3%) samples had severe Hypertension complaints.

After 30th day intervention, In experimental group I 23 (95.8%) samples had mild complaints 1 (4.2%) sample had no complaints and no samples are had severe selected complaints. In experimental group II 23 (95.8%) samples had mild complaints,1 (4.2%) sample had moderate selected complaints and no samples are had severe selected complains. But in control group majority of the samples 20 (83.3%) had moderate selected complaints and 4 (16.7%) samples had severe selected complaints .

Table 4.6.1 Presents the comparison of mean selected complaints score of the two experimental groups and control group before the intervention and level of significance

According to table 4.6.1, The mean scores on selected complaints of the two experimental group before the intervention ranged from 11.16 - 12.41 and control group the mean score of selected complaints was 13.04. Statistically there was no significant difference ($f=19.45, df(2), p<0.05$) between mean score of selected complaints of the two experimental groups and control group.

Table 4.6.2 Presents the comparison of mean selected complaints score of the two experimental groups and control group after the intervention (15th day) and level of significance

According to table 4.6.2 The mean score on overall selected complaints score of the two experimental group after 15th day intervention ranged from 8.62 - 11.0 and control group the mean score on overall selected complaints is 13.08. Statistically there was a significant difference($f=19.45, df(2,69), p<0.05$) between the mean score of selected complaints in the two experimental groups and control group.

Table 4.6.3 Presents multiple comparison of mean selected complaints score in two experimental group and control group after 15th day intervention based on POSTHOC ANOVA and level of significance.

According to table 4.6.3, experimental group I and experimental group II had 2.37 difference in mean. Statistically POSTHOC ANOVA showed that there was significant difference between mean selected complaints score in experimental group I and experimental group II. So the hypothesis **(H_9)** There will be a significant difference in mean selected complaints score between experimental group I and experimental group II after the intervention is accepted.

Between experimental group I and control group there was a mean difference of 4.45 which showed statistically there was a significant difference between mean selected complaints score of experimental group I and control group. So the hypothesis **(H_7)** There will be a significant difference in mean selected complaints score between experimental group I and control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 2.08 which showed statistically there was a significant difference between mean in selected complaints score in experimental group II and control group. So the hypothesis **(H_8)** There will be a significant difference in mean selected complaints score between experimental group II and control group after the intervention is accepted.

Table 4.6.4 Presents the comparison of mean selected complaints score of the two experimental groups and control group after the intervention (30th day) and level of significance.

According to table 4.6.4, The mean score of selected complaints of the two experimental group after 30th day intervention ranged from 3.20 - 4.33 and control group mean score of selected complaints is 12.3. There was a significant difference (f=19.45),df(2),p<0.05)in the mean score of hypertension complaints between two experimental groups and control group.

Table 4.6.5 Presents multiple comparison of mean selected complaints score in two experimental group and control group after 30th day intervention based on POSTHOC ANOVA and level of significance.

According to table 4.6.5, The table concludes that experimental group I and experimental group II had 1.12 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was a significant difference between mean selected complaints score in experimental group I and experimental group II. So the hypothesis **(H_9)** There will be a significant difference in mean selected complaints score between experimental group I and experimental group II after the intervention is accepted.

Between experimental group 1 and control group there was a mean difference of 9.17which showed that statistically there was a significant difference between mean in selected complaints score of experimental group I and control group. So the hypothesis **(H_7)** There will be a significant difference in mean selected complaints score between experimental group I and control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 8.04. which showed statistically there was a significant difference between mean in selected complaints score in experimental group II and control group. So the hypothesis **(H_8)**There will be a significant difference in mean selected complaints score between experimental group II and control group after the intervention is accepted.

According to this amla juice is more effective than garlic in reducing selected complaints.

The present study finding is supported by a study conducted by **Clinical Research Center(1993)**, This study evaluated the effect of garlic preparation among nine patients with severe hypertension. This study revealed that garlic preparations reduced blood pressure After 5 hours .No significant side effects were reported. Results indicate that this garlic preparation can reduce blood pressure and selected physical complaints of hypertension.

5.4 Association of demographic characteristics and level of blood pressure and level of complaints.

Table 4.7.1 represents the association of selected demographic variables like age, education, occupation, job, family , history of having hypertension and history of hospitalization with level of blood pressure of the total samples before intervention and there was no association between demographic variables with level of blood pressure .

Table 4.7.2 to 4.7.4 Shows the associations of selected demographic variables like age, gender education, occupation, income, job, type of family, smoking, alcohol consumption, chewing tobacco, exercise, years of having hypertension, regular treatment, history of hospitalization, following hypertension diet with level of selected complaints before intervention. There was a significant association between level of complaints and duration of treatment and there was no significant association between level of selected complaints and other demographic variables before the intervention.

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

INTRODUCTION

This chapter presents the summary of the study, summary of the findings, conclusions and recommendations.

6.1 SUMMARY OF THE STUDY

The aim of the study was to assess the effectiveness of oral supplementation of Amla juice with honey versus Garlic on the blood pressure level and selected complaints among hypertensive clients. A quasi- experimental pre- test and post test control group design was used. The study was conducted in selected community areas in Tirupur . The clients who were registered in the health centre were selected as samples using simple random sampling method. The samples were taken from Kodangipalayam area.

The conceptual frame work adopted for this study was modified Sr.Callista Roy's adaptation theory. Prior to intervention demographic data were collected. Blood pressure were measured by using the manual sphygmomanometer and the selected complaints were assessed using with rating scale for experimental and control groups. The (15ml) of Amla juice with 15ml of honey was given to the experimental group I one time a day in the morning and two grams garlic was given to the experimental group II for 30 days in the presence of the researcher and recorded blood pressure and selected complaints on 15^{th} day and 30^{th} day for the experimental group and subsequent observation was done on the 15^{th} and 30^{th} day for the control group. Data analysis and interpretation was done using descriptive and inferential statistics.

6.2 SUMMARY OF THE FINDINGS

6.2.1 Demographic data

Among the total study samples ,nearly half of the samples 13 (54.2%) and 12 (50%) belonged to the age group of 51 and above. Majority of the samples (50 to 58%) were female in two experimental groups and control group. Nearly half of the samples 8 -11 (33.3 – 45.8%) in the two experimental groups and control group had primary education and only 4 – 8 (16.7 - 33.3%) had higher secondary education. In the two

experimental groups and control group majority of the samples 21 -23 (87.5 -95.8%) were married. In the two experimental groups and control group 7 – 9 samples (29.2 - 37.5%) were private employees, in two experimental groups 9 -10 (37.5 -41.7 %) samples were coolies . Most of the samples in two experimental groups and control group 10 – 15 (41.7 -62.5%) samples had monthly income below Rs 5000. Majority of the samples in the two experimental groups and control group 15 -21 (62.5- 87.5%) samples were doing heavy work .More than half of the samples 13 (54.2%)in control group and 8 -11 (33.3 -45.8 %) in two experimental groups were from nuclear family, Remaining samples were from joint family. Almost majority of the samples 23 (95.8%) were taking both vegetables and non vegetable food.

Majority of the samples in control group 20 (83.3%) and two experimental group 17 –19 (70.8 – 79.2 %) did not have the habit of smoking. Most of the samples in two experimental groups and control group16 – 21(66.7 -87.5 %) did not have the habit of alcohol consumption and 3 – 8 (12.5 –33.3%) had the habit of alcohol Consumption. Most of the samples in two experimental groups and control group 20 -22 (83.3 - 91.7%) samples did not had the habit of tobacco chewing. All of the samples in experimental group 1 and control group 24 (100%) had the habit of doing exercise, Majority of samples 22 (91.7%) in experimental group II did not had the habit of doing exercise. All the samples in experimental group 1 and control group 24 (100%) and 23 (95.8%) in experimental group II did not have the habit of taking outside foods.

Majority of the samples 7 to 10 (29.2 to 41.7%) in two experimental groups and control groups had the history of hypertension less than 1 year, and 6 to 9 (25.0 - 37.5%) had the history of hypertension more than 5 years. Majority of the samples in two experimental groups and control group 16 to 23 (66.7 - 95.2%) had no history of hospitalization. Majority of the samples in two experimental groups and control group 17 to 19(70.8 - 79.1%) did not take regular treatment for hypertension. Majority of the samples in two experimental groups and control group 7 to 11(29.2 - 45.8%) were taking hypertension treatment for more than 1 year. In two experimental groups and control groups majority of the samples 16 to 18 (66.7 - 75.0%) did not take hypertensive diet. Majority of the samples in two experimental groups and control group 20 to 23 (83 .3- 95.8%) had the family history of hypertension. Majority of the samples in two experimental groups and control group 23 to 24 (95.8 - 100%) were not following the home remedy for hypertension.

6.2.2 Assessment of blood pressure level in the two experimental groups and control group

In two experimental groups and control group 6 to 10 (25.0 - 41.7%) had stage I hypertension, 12 to17 (50 - 70.8%) had stage II hypertension and only 1 to 2(4.2 - 8.3%) had pre hypertension before intervention. After 30th day of intervention in two experimental groups, Majority of samples in 21 -22 (87.5 - 91.7%) were in two experimental groups moved on to pre hypertension, only 2 to 3 (8.3 - 12.5%) samples had stage I hypertension and no samples had stage II hypertension. In control group l0 (41.7%) samples had stage I hypertension, 13 (54.2%) samples had stage II hypertension and only 1 (4.2%) was in pre hypertension.

Assessment of systolic blood pressure level in two experimental groups and control group

After 30th day intervention experimental group 1 and experimental group 2 had 2.50 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was a significant difference between mean systolic blood pressure in experimental group 1 and experimental group II. So the hypothesis **(H_5)** There will be a significant difference in mean systolic blood pressure score between experimental group (I) and experimental group II after the intervention is accepted.

Between experimental group 1 and control group there was a mean difference of 22.50 which showed that statistically there was a significant difference between mean blood pressure in experimental group 1 and control group. So the hypothesis **(H_1)** There will be a significant difference in mean systolic blood pressure score between experimental group(I) and control group after the intervention is accepted .

Between experimental group II and control group there was a mean difference of 25.0 which showed statistically that was a significant difference between mean blood pressure in experimental group II and control group. So the hypothesis **(H_3)** There will be a significant difference in mean systolic blood pressure score between experimental group(II) and control group after the intervention is accepted .

According to this garlic is more effective than Amla juice in controlling systolic blood pressure.

Assessment of diastolic blood pressure level in two experimental groups and control group

After 30th day intervention experimental group I and experimental group II had 0.02 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was no significant difference between mean diastolic blood pressure in experimental group I and experimental group II. So the hypothesis **(H_6)** There will be a significant difference in mean diastolic blood pressure score between experimental group(I) and experimental group II after the intervention is rejected.

Between experimental group I and control group there was a mean difference of 19.16 which showed that statistically there was a significant difference between mean diastolic blood pressure in experimental group I and control group. So the hypothesis **(H_3)** There will be a significant difference in mean diastolic blood pressure score between experimental group(I) and control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 20.1 which showed that statistically there was a significant difference between mean diastolic blood pressure in experimental group II and control group. So the hypothesis **(H_3)** There will be a significant difference in mean diastolic blood pressure score between experimental group(II) and control group after the intervention is accepted.

The research suggested that Amla juice with honey and garlic have almost the same effect in reducing blood pressure level.

6.2.3 Assessment of selected complaints in two experimental groups and control group

Among all the samples 72 (100%) (before intervention) in the two experimental groups and control groups majority of the samples 17 to 24 (70.8 - 100%) had moderate selected complaints,3 to 7 (12.5 - 29.2%) had severe selected complaints and only 1 (4.2%) had mild complaints. After 30th day intervention, In experimental group I 23 (95.8%) samples had mild complaints 1 (4.2%) sample had no complaints and no samples are had severe selected complaints. In experimental group II 23 (95.8%) samples had mild complaints,1 (4.2%) sample had moderate selected complaints and no samples are had severe selected complaints. But in control group majority of the samples 20 (83.3%) had moderate selected complaints and 4 (16.7%) samples had severe selected complaints.

After 30th day of intervention experimental group I and experimental group II had 1.12 difference in mean. It was Statistically (POSTHOC ANOVA) showed that there was a significant difference between mean selected complaints score in experimental group I and experimental group II. So the hypothesis **(H_9)** There will be a significant difference in mean selected complaints score between experimental group I and experimental group II after the intervention is accepted.

Between experimental group 1 and control group there was a mean difference of 9.17which showed that statistically there was a significant difference between mean in selected complaints score of experimental group I and control group. So the hypothesis **(H_7)** There will be a significant difference in mean selected complaints score between experimental group I and control group after the intervention is accepted.

Between experimental group II and control group there was a mean difference of 8.04. which showed statistically there was a significant difference between mean in selected complaints score in experimental group II and control group. So the hypothesis **(H_8)** There will be a significant difference in mean selected complaints score between experimental group II and control group after the intervention is accepted.

According to this Amla juice is more effective than garlic in reducing selected complaints.

6.2.4 Association of demographic variables and level of blood pressure and selected complaints

There was no association between demographic variables ,education, occupation, job family , history of having hypertension and history of hospitalization and level of blood pressure .

There was a significant association between level of complaints and duration of treatment and there was no significant association between level of selected complaints and other demographic variables before the intervention.

6.2.5 Significant Findings

- There was a significant difference between mean systolic blood pressure of experimental group I and control group after intervention 30th day (P value =0.00 which is less than 0.05)
- There was a significant difference between mean systolic blood pressure of experimental group II and control group after intervention 30th day (P value =0.00 which is less than 0.05)
- There was a significant difference between mean diastolic blood pressure of experimental group I and control group after intervention 30th day (P value =0.00 which is less than 0.05)
- There was a significant difference between mean diastolic blood pressure of experimental group II and control group after intervention 30th day (P value =0.00 which is less than 0.05)
- There was a significant difference between mean selected complaints score of experimental group I and experimental group II after intervention 15th day. (P value =0.003 which is less than 0.05)
- There was a significant difference between mean selected complaints score of experimental group I and control group after intervention 15th day. (P value =0.00 which is less than 0.05)
- There was a significant difference between mean selected complaints score of experimental group II and control group after intervention 15th day. (P value =0.012 which is less than 0.05).
- There was a significant difference between mean selected complaints score of experimental group I and experimental group II after intervention 30th day. (P value =0.057 which is less than 0.05)
- There was a significant difference between mean selected complaints score of experimental group I and control group after intervention 30th day. (P value =0.00 which is less than 0.05)

- There was a significant difference between mean selected complaints score of experimental group II and control group after intervention 15th day. (P value =0.00 which is less than 0.05)

6.3 CONCLUSION

The findings of the study concluded that there was reduction of blood pressure and selected complaints in two experimental groups after intervention compared to control group. It is clear that taking Amla juice with honey ,garlic are effective, feasible, low cost methods to reduce the blood pressure and selected complaints of clients with hypertension.

6.4 IMPLICATION

The findings of the study has implications for nursing education, Nursing service, Nursing administration and Nursing research.

6.4.1 Nursing education

The nursing curriculum should emphasize on the preventive and control measures of major health problems especially the management of the most prevalent non communicable disease like hypertension. There is a need to incorporate the supportive and complementary system of medicine in the nursing curriculum. The nurse educator can provide in service education to the nursing personnel to update their knowledge on the alternative methods of treatment like oral supplementation of Amla juice with honey ,garlic and its valuable benefits to the patients as a means of reducing blood pressure and selected complaints. The nurse educator can create awareness about the therapeutic benefits of oral intake of Amla juice with honey , garlic among the nursing personnel.

6.4.2 Nursing practice

Nursing personnel working in the practice side should arrange the awareness program about the prevention and control measures and benefits of supportive therapy in controlling blood pressure level.

The study creates awareness of the alternative therapy (oral supplementation of Amla juice with honey ,garlic) for patients with hypertension among the public and the nurses for their personal benefit and also this study compared the effectiveness of both Amla juice with honey and garlic, both are having effect on reducing blood pressure and complaints. Nurses can gain skills in providing holistic care to patients with hypertension

6.4.3 Nursing research

This is only an initial investigation to assess the effectiveness of oral supplementation of Amla juice with honey ,garlic . among blood pressure and selected complaints. There is a need for intensive research in the area of nursing to be done on supportive therapy to develop low cost preparation of management of hypertensive clients. The findings of the study useful to further research in the area.

6.5 RECOMMENDATIONS

- The study can be replicated for large sample for generalization
- A similar study can be conducted in different settings
- A qualitative study can be conducted to identify perception of clients with hypertension towards complementary therapies
- A comparative study to assess and compare the effects with different supportive therapy.

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APPENDIX – I

LETTER REQUESTING PERMISSION TO CONDUCT THE STUDY

To

The village president,

Kodangipalayam,

Tirupur.

Sub: Letter requesting permission for conducting the study.

Respected Sir / Madam,

Ms. T. Brintha is a postgraduate nursing student of our institution. She has selected the below mentioned topic for her research project to be submitted to Dr.MGR Medical University of Health Science as a partial fulfillment of Master Nursing degree **"An experimental study to assess the effect of oral supplementation of Amla juice with honey vs Garlic on Blood pressure and selected complaints among patients with Hypertension in a selected community at Coimbatore "** Regarding this project, she is in need of your esteemed help and co-operation as she is interested in conducting a study in the community. I request you to kindly permit her to conduct the proposed study and provide her the necessary facilities.

The student will furnish further details of the study if required personally. Please do the needful and oblige.

Thanking You

Yours Faithfully,

Place:

Date :

R.V.S. COLLEGE OF NURSING

RVS INSTITUTE OF HEALTH SCIENCES

242-B, Trichy Road, Sulur, Coimbatore - 641402.

Ph : 0422-2687421, 2687480, 2687603, Fax : 0422-2687604

www.nursing.rvshs.ac.in

(Affiliated to the TN Dr. M.G.R Medical University, Chennai)

Recognized by the Indian Nursing Council,New Delhi.)

Mrs.Saramma Samuel

Principal

Ref No. BN-5/NSG/2015 - 01

Date..... 13.03.2015

To

The Village President,

Kodangipalayam,

Tirupur.

Respected Sir/Madam,

Ms. T. Brintha is a Post Graduate Nursing student of our College. She has selected the below mentioned topic for her research project to be submitted to Dr. MGR Medical University as a practical fulfillment of Master Nursing Degree.

"An experimental study to assess the effect of oral supplementation of Amla Juice with Honey Vs Garlic on Blood pressure and selected complaints among patients with Hypertension in a selected community at Tirupur District"

Regarding this project, she is in need of your esteemed help and cooperation as she is interested in conducting the study, in the community. I request you to kindly grant her permission for the same and oblige.

The student will furnish further details of the study if required personally.

Permited

Thanking You

Yours faithfully,

SARAMMA SAMUEL
PRINCIPAL
R.V.S. COLLEGE OF NURSING
242/B, TRICHY ROAD,
SULUR, COIMBATORE - 641 402

APPENDIX - II

REQUISITION LETTER FOR CONTENT VALIDITY

From

301310501

M.Sc (N) Student,

RVS College of Nursing,

Sulur, Coimbatore- 641402

To

Through the principal

Respected Sir/Madam

Sub : Letter requesting opinion and suggestion of experts for establishing content validity of the tool.

I am a M.Sc (N) student in RVS College of Nursing, Sulur, Coimbatore in the specialty Medical Surgical Nursing. As per the requirement for the partial fulfillment of this nursing degree under the Tamil Nadu Dr. MGR Medical University, I have selected the following topic for dissertation**: "A Study to Assess the Effect of oral supplementation of Amla juice with honey vs. garlic on Blood pressure and selected complaints among patients with hypertension in a selected community at Tirupur.**

I kindly request you to go through the research tool and validate against criteria given in the sheet.

Thanking you

Yours faithfully

APPENDIX – III

LIST OF EXPERTS

Medical Expert:

1. **Dr.A. Vijay MBBS, MD.,**

   Consultant physician,

   Siva Multi Specialty Hospitals

   Eathamozhy, Nagercoil

Dr. A. VIJAY, M.B.B.S., M.D.,
Reg. No: 79536,
SIVA HOSPITAL,
EATHAMOZHY.

Nursing Experts:

1. **Mr.P.KUZHANTHAIVEL M.Sc (N)**

   Professor,

   Department of Medical Surgical Nursing,

   KMCH College of Nursing,

   Coimbatore.

2. **Mr.K.BALASUBRAMANIAN M.Sc (N**

   Professor,

   Department of Medical Surgical Nursing,

   KMCH College of Nursing,

   Coimbatore.

APPENDIX - IV

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool has been developed by 301310503, II year M.Sc (Nursing)., student, of R.V.S. College of Nursing, Sulur, Coimbatore to collect data on the problem. **"An experimental study to assess the effect of oral supplementation of Amla juice with honey $v_{s.}$ Garlic on Blood pressure and selected complaints among patients with Hypertension in a selected community at Coimbatore."** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Name and Address :

Signature :

Seal :

Date :

APPENDIX -V

CRITERIA RATING SCALE FOR VALIDATION

INSTRUCTION

The expert is requested to go through the following criteria for evaluation of check list. Three columns are given for response and a column for remarks. Kindly place a tick mark in the appropriate column and give remarks.

INTERPRETATION OF COLUMNS

Columns I - Meets the criteria

Columns II - Partly meets the criteria

Columns III - Does not meet the criteria

S.No	Criteria	I	II	III	Remarks
1.	**Scoring** - Appropriateness - Adequacy - Accurateness - Clarity - Simplicity				
2.	**Content** - Organization a. Logical Sequence b. Continuity - Adequacy - Appropriateness - Relevance				
3.	**Language** - Appropriateness - Clarity - Simplicity - Concise - Precision				
4.	**Practicability** - Is it easy to score - Does it precisely measure the skill - Utility				

Any other Suggestions

…….....

……

Signature :

Name, Designation :

Address :

APPENDIX - VI

RESEARCH TOOL

An experimental study to assess the effect of oral supplementation of Amla juice with honey v_s Garlic on Blood pressure and selected complaints among patients with Hypertension in a selected community at Coimbatore

INTRODUCTION

Hypertension is a common health problem among people. It can be very well controlled by taking proper diet, adequate exercises, changes in habits , alternative therapy and nutritional supplements. there are lot of nutritional supplements which a person with Hypertension can used to keep Blood pressure under control.

PURPOSE

The purpose of this questionnaire is to find out the information regarding Hypertension

INSTRUCTION

a. Kindly give your response to the questions asked
b. Tick it any one of the appropriate Colum
c. Do not leave any questions without answer
d. All the information given will be kept confidential

Sample no:

Address:

PART 1: DEMOGRAPHIC PROFILE

1.Age in years

1. 30 to 40 yrs ☐
2. 41 to 50 yrs ☐
3. 51 to 60 yrs ☐
4. Above 60 yrs ☐

2. Gender

1. Male ☐
2. Female ☐

3. Religion

1. Hindu ☐
2. Christian ☐
3, Muslim ☐
4. Other ☐

4. Educational status

1. Not attended school ☐
2. Primary education ☐
3. Higher secondary ☐
4. Graduate and above ☐

5. Occupation

1.Coolie ☐
2. Private employee ☐
3. Own business ☐
4.Unemployed ☐

6. Income per month

1. Above Rs 5000 ☐
2.Rs 5000 –Rs 10,000 ☐
3.Rs 10,000-Rs 15,000 ☐
4. Above Rs 15,000 ☐

7. Nature of job

1. Sedentary ☐
2. White collar job ☐
3. Heavy ☐
4. Normal ☐

8. Marital status

1. Single ☐
2. Married ☐
3. Widow ☐
4. Divorced ☐

9. Type of family

1. Nuclear ☐
2. Joint ☐

10. Type of food

1. Vegetarian ☐
2. Non vegetarian ☐
3. Both ☐

INFORMATION RELATED TO PERSONAL HABITS

11. Do you have the habit of smoking

1. Yes ☐
2. No ☐

If yes how long :_____

12. Do you have the habit of consuming alcohol

1. Yes ☐
2. No ☐

If yes how long:_____

13. Do you have the habit of chewing tobacco

1. Yes ☐

2.No ☐

If yes how long:_____ What product:_____

14. Do you exercise regularly

1.Yes ☐

2. No ☐

If yes specify:_____

15. Do you have the habit of eating outside foods

1. Yes ☐

2. No ☐

If yes frequency:_____

INFORMATION RELATED TO DISEASE CONDITION

16. Since how many years do you have Hypertension?

1. Less than 1 year ☐

2. 1 to 5 years ☐

3. More than 5 years ☐

17. Any previous history of hospitalization because of Hypertension?

1. Yes ☐

2. No ☐

18. Are you taking treatment regularly for hypertension?

1.Yes ☐

2. No ☐

19. How long are you taking treatment for Hypertension?

1.Yes ☐

2.No ☐

20. Are you following Hypertensive diet?

1.Yes ☐

2. No ☐

21. Does anyone else in your family have Hypertension?

1.Yes ☐

2. No ☐

If yes specify:_____

22. Do you follow any home remedy for Hypertension?

1. Yes ☐

2. No ☐

If yes specify:_____

PART 11: OBSERVATIONAL SCHEDULE

SAMPLE NO:

S.NO	BLOOD PRESSURE mm hg	
	SYSTOLIC	DIASTOLIC
DAY 1		
DAY 15		
DAY 30		

PART III: RATING SCALE FOR SELECTED COMPLAINTS OF HYPERTENSION

Please tick below complaints if you have

S.NO	COMPLAINTS	PRE INTERVENTION			POST INTERVENTION					
					15 TH DAY			30 TH DAY		
		Never (0)	Some Time (1)	Often (2)	Never (0)	Some Time (1)	Often (2)	Never (0)	Some Time (1)	Often (2)
1	Fatigue									
2	Giddiness									
3	Palpitation									
4	Joint pain									
5	Blurred vision									
6	Breathlessness									
7	Headache									
8	Vomiting									
9	Chest pain									
10	Sleeplessness									

INTERPRETATION

1 to 6- averagely affected with complaints

7 to 12- moderately affected with complaints

12 to 20- severely affected with complaints

APPENDIX-VII

APPENDIX - VIII

ENGLISH EDITING LETTER

FROM,

Mrs. Laika
Principal
Udaya College of Arts & Science
K.K. District.

TO,

The principal,

R.V.S College Of Nursing

Sulur

Coimbatore

Dear Madam,

This is to certify that I have done English editing for the research Thesis given to me by Mrs. Brintha .T ,II[nd] year M.Sc. Nursing student. The corrected copy is handed over to the said student accordingly

Yours Sincerely

UDAYA COLLEGE OF ARTS AND SCIENCE
AMMANDIVILAI POST
PIN: 629 204
K.K.DIST.
UDAYA NAGAR VELLAMODI

PRINCIPAL,
UDAYA COLLEGE OF ARTS AND SCIE
UDAYA NAGAR, VELLAMODI, K.K. DI
AMMANDIVILAI POST, PIN: 629 20

APPENDIX - IX

TAMIL EDITING LETTER

FROM,

Dr. T. AJI
Asst. Prof of Tamil
Rani Anna Govt. College
Tirunelveli.

TO,

The principal,

R.V.S College Of Nursing

Sulur

Coimbatore

Dear Madam,

This is to certify that I have done Tamil editing for the research tool given to me by Mrs. Brintha .T ,II[nd] year M.Sc. Nursing student. The corrected copy is handed over to the said student accordingly

Yours sincerely

Dr. T. AJI
Assistant Professor
Department of Tamil
Rani Anna Govt. College (W)
Tirunelveli - 627 008

Sulur

APPENDIX - X

REPORT FOR SELF ANALYSIS TO RULE OUT PLAGIARISM USING THE SOFTWARE PLAGIARISM DETECTOR

Plagiarism Detector – Originality Report

Plagiarism Detector Project: [http://plagiarism-detector.com]

Application core version: 6.50

Originality report details

Generation Time and Date:	31/08/2015 1:44:21 PM
Document Words count:	23238

Referenced 0% / Linked 0%

Original - 98% / 2% - Plagiarism